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PHYLLIS BARCLAY-SMITH, F.Z.S.

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# THE AVICULTURAL : SOCIETY :

FOR THE STUDY OF  
BRITISH & FOREIGN BIRDS  
IN FREEDOM & CAPTIVITY

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1st JANUARY, 1957

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 1956 BURNET, COLIN A. ; " Murrunjai," Merriwa 3N., N.S.W., Australia.  
 1956 BURT, F. J., F.Z.S. ; " The Hollies," 78 Tollers Lane, Old Coulsdon, Surrey.  
 1952 BURTON, M., D.Sc., F.L.S., F.Z.S. ; British Museum (Natural History), Cromwell Road, London, S.W. 7.  
 1953 BURY, The Viscountess, J.P. ; Mount Stewart, Newtownards, Co. Down, N. Ireland.  
 1942 BUXTON, J. LEAVESLEY, F.Z.S. ; Brightlea, 227 Streetsbrook Road, Solihull, Birmingham.  
 1956 BYE, G. G. ; 29 Lurgan Walk, Knowle, Bristol 4.  
 1948 BYRNE, J. ; 13 Hartfield Crescent, Wimbledon, S.W. 19.
- 1953 \*CAFFERTY, Miss D. I. ; 662 Wellington Avenue, Chicago 14, Ill., U.S.A.  
 1954 CAMERON, Mrs. J. WALTER ; Paia, Maui, Territory of Hawaii.  
 1933 CAMPEY, A. D., B.E.M. ; " Northlands," Hull Bridge Road, Beverley, E. Yorks.  
 1934 CAPRON, C. N. ; 1020 South L. Street, Lake Worth, Florida, U.S.A.  
 1956 CAREY, R. J. P. ; Dominion Museum, Wellington, New Zealand.  
 1954 CARLSSON, T. ; Skolgatan 9, Malmberget, Sweden.  
 1956 CARPENTER, Mrs. B. ; 2820 College Avenue, Berkeley 5, Calif., U.S.A.  
 1955 CARPENTIER, J. ; Diepestraat 59, Antwerp, Belgium.  
 1918 CARR, PERCY ; Ormond Lodge, Newbold-on-Stour, Nr. Stratford-on-Avon.  
 1952 CARR, W. H. ; Murray Lodge, Newmarket, Suffolk.  
 1952 CARTHEW, W. R. ; P.O. Box 49, Vereeniging, South Africa.  
 1950 CARTWRIGHT, K. G. ; " The Gables," 10 Brick-Kiln Street, Quarry Bank, Nr. Brierley Hill, S. Staffs.  
 1954 CASTAN, Dr. R. ; 16 Brd. Président Fallières, Gabès, Tunisie.  
 1953 CASTLE, D. F. ; " Clive Cottage," Stockens Green, Knebworth, Herts.  
 1956 CATERER, A. D. ; 5 Lutterworth Road, Wyken, Coventry.  
 1954 CHADWICK, J., F.Z.S. ; Sewerby, Bridlington, E. Yorks.  
 1956 CHAMBERLAIN, Miss C. PEARL ; Gt. Broadhurst Farm, Heathfield, Sussex.  
 1956 CHANNING, Mrs. Y., F.Z.S. ; 14 Sycamore House, Maitland Park Villas, Hampstead, N.W. 3.
- 1932 \*CHAPLIN, The Right Hon. the Viscount, F.L.S., F.Z.S., M.B.O.U. ; Wadstray House, Blackawton, Nr. Totnes, Devon.  
 1951 CHEESMAN, M. R. ; 4888 South 13th East Street, Salt Lake City 7, Utah, U.S.A.  
 1930 CHICHESTER, Mrs. H. G. ; Galgorm Castle, Ballymena, Co. Antrim, N. Ireland.  
 1956 CHILSTON, Viscount ; Chilston Park, Sandway, Nr. Maidstone, Kent.  
 1956 CHILVERS, W. ; Walmsley House, Hambleton, Selby, Yorks.

- 1914 CHRISTIE, Mrs. G. ; Kellas, By Elgin, Morayshire.
- 1945 CLARENCE, Capt. A. A. ; 25 Elms Avenue, Parkstone, Dorset.
- 1949 CLARK, G. T., "Maidsmere," Finstall, Bromsgrove, Worcs.
- 1942 CLARK, Mrs. G. T., F.Z.S. ; "Maidsmere," Finstall, Bromsgrove, Worcs.
- 1956 CLARK, R. S. ; 64 Skene Street, Shepparton, Victoria, Australia.
- 1956 CLARKE, K. D. ; 2 Barker Avenue, Tuart Hill, Western Australia.
- 1953 CLAYDEN, Major C. N. ; The Middlesex Regt., Inglis Barracks, Mill Hill, N.W. 7.
- 1952 CLAYTON, S. ; Heathfield, St. Philip's Road, Newmarket, Suffolk.
- 1950 CLAYTON, T. L. ; 75 Park Road, Hampton Hill, Middx.
- 1956 CLEAR, Prof. VAL ; Anderson College, Anderson, Indiana, U.S.A.
- 1938 CLEMENTS, O. E., L.D.S., R.C.S.(Eng.) ; 1 Bayswater Road, Highlands, Salisbury, Southern Rhodesia.
- 1949 CLEMITSON, J. W. ; 25 St. Paul's Gardens, Whitley Bay, Northumberland.
- 1956 COLLINS, D. ; Bella Farm, Wharram, Malton, Yorks.
- 1956 COLLINS, Mrs. G. ; 9 Glen Almond Street, New Plymouth, New Zealand.
- 1955 COLQUHOUN, J. M. ; Ardmore, Papakura, R.D., New Zealand.
- 1954 CONWAY, W. G. ; St. Louis Zoological Park, St. Louis 10, Mo., U.S.A.
- 1956 COOK, H. M. ; 62 Evans Street, Belmont, N.S.W., Australia.
- 1950 COOMBS, E. W., F.Z.S. ; "The Woodlands," Walderslade Road, Nr. Chatham, Kent.
- 1926 COOPER, Mrs. C. M. ; "Villa D'Este," Burges Road, Thorpe Bay, Essex.
- 1953 COOPER, Mrs. F. D. ; Dunstan Lodge, Churchdown, Gloucester.
- 1952 COOPER, J. T. ; Hall Farm, Outwell, Nr. Wisbech, Cambs.
- 1951 CORBETT, R. C. U. ; Itchen Abbas Cottage, nr. Winchester, Hants.
- 1956 CORBRIDGE, J. ; 47 Kenyon Lane, Moston, Manchester 10.
- 1953 CORLETT, JEROME ; Rt. 1—Box 878, Mobile, Alabama, U.S.A.
- 1942 CORWIN, SAUL C. ; 165 Broadway, New York 6, New York, U.S.A.
- 1955 COSTA, Dr. C. FERNANDO ; Rua Dr. Antonio Martins No/11, Estoril, Portugal.
- 1956 COTT, TURLOUGH ; "The Shrubbery," Kilcock, Co. Kildare, Ireland.
- 1956 COUTTS, Miss JOY ; 102 Young Street, Ayr, Queensland, Australia.
- 1956 COWAN, JOHN C. ; 41 Birdwood Circus, Bicton, Western Australia.
- 1950 COWARD, D. M., F.Z.S. ; "Karibu," Longfellow Avenue, Wellsway, Bath.
- 1925 COWLEY, H. ; The Manor House, Bubbenhall, Nr. Coventry.
- 1947 COWLISHAW, A. G. ; The Chalet, 35 Aylesbury Street, Bletchley, Bucks.
- 1933 COX, Mrs. B., F.Z.S. ; Barncrosh, Castle Douglas, Scotland.
- 1956 COX, D. W. ; 32 Beamsley Road, Frizinghall, Shipley, Yorks.
- 1952 COYNE, Major S. F. ; The Sherwood Foresters, Normanton Barracks, Derby.
- 1956 CREED, C. W. G. ; Dalhousie, 47 Gordon Avenue, Highams Park, E. 4.
- 1956 CROCKFORD, W. A. ; 67 Davenport Avenue, Hessle, E. Yorks.
- 1929 CROFTS, ROBERT T. ; 85 Reeves Avenue, Cross Heath, Newcastle, Staffs.
- 1949 CRONE, G. H. ; Jan Luykenstraat 16, Amsterdam, Holland.
- 1956 CROWE, R. W. ; Grey Tree, South Nutfield, Surrey.
- 1956 CULLEN, KELVIN J. ; 227 Wilson Street, Broken Hill, N.S.W., Australia.
- 1948 CUMMINGS, W. D., F.Z.S. ; The Keston Foreign Bird Farm, Ltd., Brambletye, Keston, Kent.
- 1952 CUNNINGHAM, A. M., F.Z.S. ; 21 Kitchener Road, East Finchley, N. 2.

- 1956 CURETON, J. ; Route 3, Cedar Lane Road, Greenville, South Carolina, U.S.A.
- 1955 CURLEWIS, Dr. B. WARREN ; 86 Crescent Road, Newport, N.S.W., Australia.
- 1956 CURTIS, LAWRENCE ; Fort Worth Zoo and Aquarium, Fort Worth, Texas, U.S.A.
- 1939 DABNER, P. L. ; 56 Arkwright Road, Sanderstead, Surrey.
- 1951 D'AETH, A. H., F.Z.S. ; 45 Ormonde Terrace, Regent's Park, N.W. 8.
- 1946 DALBORG-JOHANSEN, J. ; Dyr-laege, Graabroedreplads 6, Odense, Denmark.
- 1949 DALGETY, C. T., F.Z.S., M.B.O.U. ; Broomy Lodge, Linwood, Ringwood, Hants.
- 1937 DALLOW, F., M.B.E. ; 13 Hillingdon Road, Stretford, Manchester.
- 1954 DANECOURT, W. A. ; Hartley, Dartford, Kent.
- 1948 DANHIER, M. F. ; 186 Chaussée de Charleroi, Brussels, Belgium.
- 1950 DARMAN, H. J., F.Z.S., F.R.H.S. ; 44 Fraser Road, Walthamstow, London, E. 17.
- 1932 DARNTON, Mrs. I., M.B.O.U. ; Sissinghurst Court, Cranbrook, Kent.
- 1956 DARNTON, R. E. ; Sissinghurst Court, Cranbrook, Kent.
- 1956 DAUNCEY, A. N. ; 123 Ridgeway, Edgbaston, Birmingham 17.
- 1956 DAVENPORT, ANDREW B. ; 34 Molden Street, E. Ormond, Victoria, Australia.
- 1956 DAVEY, H. ; 3 The Crescent, Lower Willingdon, Nr. Eastbourne, Sussex.
- 1956 DAVIES, D. H. ; 7 Exeter Way, Pinelands, Capetown, S. Africa.
- 1954 DAVIES, G. C. N. ; P.O. Box 1155, Lourenço Marques, Portuguese East Africa.
- 1955 DAVIS, E. F. ; Columbus Zoological Park, Columbus, Ohio, U.S.A.
- 1927 DAVIS, Sir GODFREY, I.C.S., F.Z.S. ; Beresfords, Boughton Monchelsea, Nr. Maidstone, Kent.
- 1941 DAVIS, H. H. ; Little Stoke, Patchway, Bristol.
- 1956 DAY, J. ; 7 Fitzilian Avenue, Oak Road, Harold Wood, Essex.
- 1950 DAY, J. N. E., M.Sc., Ph.D. ; 18 Homewood Road, St. Albans, Herts.
- 1952 DEACON, D. R. ; 41 Hilders Road, Western Park, Leicester.
- 1951 DEAN, A. W. S. ; Sudbrook Manor, Sudbrook, Grantham, Lincs.
- 1956 DEANE, R. S. W. ; c/o Utilities Dept., T.T.O.C. Pointe-à-Pierre, Trinidad, B.W. I.
- 1955 DEAN, W. ; 20 Manor Road, Bolenall, Tamworth, Staffs.
- 1952 DEANS, G., F.Z.S. ; 3 New Edinburgh Road, Dalkeith, Midlothian.
- 1953 D'EATH, J. O. ; The Grove, Hadley, Barnet, Herts.
- 1953 DE BEAUMONT, Mrs. G. ; Blairlogie House, Menstrie, Clackmannanshire, Scotland.
- 1954 DE CARVALHO MONTEIRO, A. ; Praca dos Restauradores 13-2° D., Lisbon, Portugal.
- 1917 DECOUX, A. ; Géry, Aix-sur-Vienne, Haute-Vienne, France.
- 1948 DE GOEDEREN, G. ; Orteliuskade 74, Amsterdam-W, Holland.
- 1955 DE KANTER, A. L. G. ; 22 Thwaite Street, Cottingham, E. Yorks.
- 1903\* DENNIS, Mrs. H. E. ; Lower Nash, Nutbourne, Pulborough, Sussex.
- 1924 DENNY, Mrs. H., C.B.E., J.P., F.Z.S. ; The Chantry, Horsham, Sussex.
- 1930 DE PASS, GERALD V., F.Z.S. ; The Old Kennels, Satwell, Nr. Henley-on-Thames.
- 1932 DE PLEDGE, Miss BERYL ISABEL, F.Z.S. ; 9 Beaufort House, Beaufort Street, Chelsea, S.W. 3.
- 1956 DE ROECK, A. ; 58 Avenue Arthur Goemaere, Antwerp, Belgium.

- 1948 DESAI, PRADYUMAN K. ; Takhteshwar Plot, Bhavnagar, Saurashtra, India.  
 1956 DEWHURST, Miss S. ; Dungarthill, Dunkeld, Perthshire, Scotland.  
 1945 DEXTER, J. E., M.M. ; Mansdale, Calvert Road, Dorking, Surrey.  
 1951 DIEDRICH, W. W. ; Dierenpark Wassenaar, Rijksstraatweg 667, Wassenaar, Holland.  
 1955 DIERCXSENS, LOUIS ; Président, Société Royale de Zoologie d'Anvers, 26 Place Reine Astrid, Antwerp, Belgium.  
 1954 DIGBY, J. M. T. ; 50 Cressingham Road, Burnt Oak Estate, Edgware, Middx.  
 1956 DIGBY, R. D. ; 47 Westview Drive, Woodford Green, Essex.  
 1955 DIGGLE, A. ; 10 Cross Hill Street, Highcrompton, Shaw, Nr. Oldham, Lancs.  
 1955 DILGER, Professor W. C. ; Laboratory of Ornithology, Cornell University, Ithaca, New York, U.S.A.  
 1955 DI SABATO, L. R. ; 2362 Joyce Avenue, Columbus, Ohio, U.S.A.  
 1953 DOLTON, K. W. ; Sundown, Oakleigh Avenue, Hallow, Worcester.  
 1954 DOMINGUEZ, Dr. R. H. ; Box 248, Utuado, Puerto Rico.  
 1956 DOMINY, G. A. ; Beechcroft, Curdridge, Southampton.  
 1924 \*DOOLY, THOMAS L. S. ; Whimbrel, Kirklake Road, Formby, Nr. Liverpool.  
 1955 DÖPFER, Frau ERIKA ; Hercules Strasse 8, Kassel, Germany.  
 1953 DOSSCHE, ARM. ; Toekomststr. 38, St. Amandsberg-Ghent, Belgium.  
 1955 DOUETIL, B. N. ; "Chalfont," Waynefleete Tower Ave., Esher, Surrey.  
 1956 DRAPER, C. R. ; 802 Church Lane, Yeadon, Pa., U.S.A.  
 1956 DRAPER, M. F. ; "Wessex," Dummer, Basingstoke, Hampshire.  
 1956 DRESSLER, J. ; 40 Brent Road, Plumstead, S.E. 18.  
 1947 DRING, W. T., F.Z.S. ; 12 East Park Street, Chatteris, Cambs.  
 1953 DRING, Mrs. W. T., F.Z.S. ; 12 East Park Street, Chatteris, Cambs.  
 1955 DRIVER, H. L. ; 64 Laburnam Road, Biggleswade, Beds.  
 1947 DUFOUR, Colonel JOHN ; 167 Avenue de Belgique, Antwerp, Belgium.  
 1954 DUFTY, J. H., J.P. ; Post Office, Aberdare, 3 N. via Cessnock, N.S.W. Australia.  
 1939 DULANTY, BRIAN H., F.Z.S. ; Fisheries Cottage, Chorley Wood, Herts.  
 1922 DUNMORE, Oscar E., F.Z.S. ; 31 Mickleton Drive, Evington, Leicester.  
 1930 DUNSTER, Capt. J. E. ; Bucklebury Village, Nr Reading, Berks.  
 1956 DUPONT, A. ; 25 Ermitage, Wavre, Belgium.  
 1927 DUYZEND, P. ; Koppeldijk 24, Huize, "Casarca," Zeist, Holland.  
 1956 DYSTER, MELVIN B., M.D. ; 3231 Porter Road, Niagara Falls, New York, U.S.A.
- 1936 EAVES, W. L., F.Z.S. ; 581 Warwick Road, Solihull, Birmingham.  
 1954 EGAN, E. ; 16 Tewkesbury Avenue, Droylsden, Nr. Manchester.  
 1955 ELLIS, C. W. ; Corsham Court, Corsham, Wilts.  
 1935 ENGELBACH, Dr. PIERRE ; 10 Rue Copernic, Paris (16<sup>e</sup>), France.  
 1955 ESSON, Mrs. M. D. ; 3 Western Avenue, Gidea Park, Romford, Essex.  
 1950 EVANS, F. J., F.Z.S. ; 51 Brunswick Road, Leyton, E. 10.  
 1929 EVANS, Miss JOAN ; Townsend, Middle Wallop, Hants.  
 1950 EVANS, R. E., M.B., Ch.B. ; (Present Address Unknown.)  
 1955 EVERITT, Sqd.-Ldr. C. ; 5 Brooklyn Grove, South Norwood, S.E. 25.  
 1955 EVERITT, Mrs. C. M. ; 5 Brooklyn Grove, South Norwood, S.E. 25.  
 1956 EZRA, Miss RUTH M. ; Chestnut Lodge, Old Common, Cobham, Surrey.

- 1956 FAIR, G. S. ; 23 Woodlands Terrace, Bothwell, Scotland.  
 1955 FAIRBARN, ANDREW ; The Round Hill, South Benfleet, Essex.  
 1953 FAIRIE, G. W. ; 76 Stirling Road, Tullibody, Clackmannanshire, Scotland.  
 1949 FANCUTT, FRANK, F.Z.S. ; 86 Linden Drive, Alvaston, Derby.  
 1956 FARNWORTH, P. F. ; Pora Pora, Whakatane, New Zealand.  
 1946 FAUPELL, C. L. ; 45 Dickason Road, Heathmont, Ringwood, Victoria, Australia.  
 1951 FIELD, Mrs. B. ; Whitebrook, Widbrook Common, Cookham, Berks.  
 1956 FIELDING, J. ; 66 Howard Avenue, Bexley, Kent.  
 1950 FIERLAFIJN, J. ; Karel Oomstraat 24, Antwerp, Belgium.  
 1953 FINCH, Col. H. B., M.C. ; "Revesby," Hutton Road, Ash Vale, Nr. Aldershot, Surrey.  
 1954 FINDLAY, Major J., D.S.O., F.R.Z.S. ; "Cosie Brae," West Cults, Aberdeenshire.  
 1952 FIORAVANTI, The Marquis ; Bellosguardo 14, Florence, Italy.  
 1956 FLETCHER, A. W. E. ; 136 Chester Road, Helsby, Cheshire.  
 1954 FLETCHER, S. ; 4 Loverseed Vale, Union Road, Nottingham.  
 1956 FLINTOFT, Mrs. J. W. ; Box 727, Issaquah, Washington, U.S.A.  
 1956 FLYNN, J. J. ; 12 Wellwood Street, Lenah Valley, Hobart, Tasmania, Australia.  
 1948 FOGG, H. ; 190 Station Road, Wylde Green, Sutton Coldfield, Nr. Birmingham.  
 1925 FOOKS, F. E. ; Clères, Seine Inférieure, France.  
 1932 FOOKS, H. A. ; Grizedale Lodge, Hawkshead, By Ambleside, Westmorland.  
 1951 FORD, J. ; 186 Woolwich Church Street, Woolwich, S.E. 18.  
 1953 FOSTER, P. ; 72 Stockport Road, Cheadle Heath, Stockport.  
 1951 FOTHERGILL, Miss S. A., F.Z.S. ; 8 Whitelands House, Sloane Square, London, S.W. 3.  
 1953 FRAMPTON, P. ; 53 Brunker Road, Broadmeadow, N.S.W., Australia.  
 1954 FRANKS, D. C. ; Argyll, 75 Old Road, Harlow, Essex.  
 1933 FRAYNE, RALPH ; 50 Cantley Lane, Bessacarr, Doncaster.  
 1956 FREW, J. H. ; 91 Canal Street, Saltcoats, Ayrshire.  
 1950 FROST, R. ; The Gravels, 61 Station Road, Brimington, Chesterfield.  
 1908 FROST, WILFRED J. C. ; c/o Zoological Society of London, Regent's Park, London, N.W. 1.  
 1947 FROSTICK, W. B., M.B.O.U. ; 26 Minster Precincts, Peterborough, Northants.  
 1929 FURNER, A. C. ; Oakdene, 115 Whitaker Road, Derby.  
 1950 GADD, J. A. ; 75 Holly Road, Aldershot, Hants.  
 1948 GALLAND, JOHN F. ; 197 Fraser Street, Howick, Pietermaritzburg, Natal, South Africa.  
 1956 GANNER, Miss E. G. ; 149 Holland Park Avenue, London, W. 11.  
 1953 GARDENER, L. F. ; 10 New Way, Pinelands, Cape Town, S. Africa.  
 1956 GARDINER, H. ; Great Wasketts, Gardiners Lane, Crays Hill, Billericay, Essex.  
 1941 GARDNER, A. H. ; 21 Kingsland Road, Strathfield, Sydney, N.S.W., Australia.  
 1956 GARNER, J. F. ; The Cabin, Far Street, Bradmore, Nottingham.  
 1951 GARNER, R. ; 1 Arno Vale Gardens, Woodthorpe, Nottingham.  
 1951 GARRATT, J. C. ; "Crossways," Sea Avenue, Rustington, Sussex.  
 1949 GARY, F. L. ; Earlham, Columbus, New Jersey, U.S.A.  
 1950 GASK, Miss D., F.Z.S. ; "Twa Noon," Lincoln Road, Chalfont-St.-Peter, Bucks.

- 1956 GATES, REV. ROBERT H. ; 370 Commercial Road, London, E. 1.  
 1956 GAVED, P. H. ; 1 Linden Cottages, High Street, Yatton, Nr. Bristol.  
 1956 GEARY, R. ; School Cottage, Anslow, Burton-on-Trent, Staffs.  
 1948 GEERTSEMA, Lt.-Colonel C. C. ; Soestdijk Palace, Baarn, Holland.  
 1950 GEMMILL, JOHN ; Aikenhead, Kilmarnock, Ayrshire.  
 1956 GENT, Mrs. O. S. ; 88 High Street, Berkhamsted, Herts.  
 1948 \*GERARD, Lord, F.Z.S., M.B.O.U. ; Blakesware, Ware, Herts.  
 1956 GERRITS, H. A. ; 667 Rijkstraatweg, Wassenaar, Holland.  
 1953 GILBERT, R. N. ; 324 Hampton Avenue, Salt Lake City 4, Utah, U.S.A.  
 1950 GILBERT, W. O., F.Z.S. ; 31 Douglas Road, Luton, Beds.  
 1950 GILBERT, Mrs. W. O., F.Z.S. ; 31 Douglas Road, Luton, Beds.  
 1948 GILL, J. M. ; Kahfax, Station Approach, South Ruislip, Middx.  
 1953 GILLAN, A. ; 66 Broomhill Road, Aberdeen, Scotland.  
 1946 GILLEN, JOHN ; Ballycraigy, Ballymena, Co. Antrim, N. Ireland.  
 1955 GILLMOR, R. A. F. ; 58 Northcourt Avenue, Reading, Berks.  
 1955 GILMOUR, E. F., A.M.A., M.S.B.E. ; Director, Doncaster Museum and Art Gallery, Waterdale, Doncaster.  
 1956 GINN, JAMES F. ; 451 Metropolitan Pl. S.E., Atlanta 16, Georgia, U.S.A.  
 1953 GJESSING, G. A. ; "Woodberry Hill," Konnerud, Drammen, Norway.  
 1956 GLASS, W. G. ; 25 Olympia Hill, Morpeth, Northumberland.  
 1956 \*GLEADOW, Dr. E. F. ; The Mill House, Farningham, Kent.  
 1928 GLENISTER, A. G., C.B.E., F.Z.S., M.B.O.U. ; The Barn House, East Blatchington, Seaford, Sussex.  
 1931 GLOVER, P. H., F.Z.S. ; Isa Lei, 2 Round Hill Road, Livermead, Torquay, Devon.  
 1953 GLOVER, P. J. ; Ridge Estate, P.O. Box 12, Ruiru, Kenya Colony, East Africa.  
 1950 GODWIN, J. H. ; "Cherry Dell," Alderton Drive, Ashridge Park, Berkhamsted, Herts.  
 1950 GOETZ, L. DALE ; 3116 N. Ernst Street, Franklin Park, Illinois, U.S.A.  
 1950 GOMM, F. A. ; The Cave, Amersham Road, Hazlemere, High Wycombe, Bucks.  
 1953 GOOD, Mrs. E. H. ; Buckland Fields, Lymington, Hants.  
 1945 GOODWIN, DEREK, M.B.O.U. ; c/o Bird Room, British Museum (Natural History), Cromwell Road, S.W. 7.  
 1956 GOOLD, S. E. ; P.O. Box, Devonport, Tasmania, Australia.  
 1945 GORDON, Mrs. BEATRICE HOOD CLAESON, F.Z.S. ; Cluny Castle, Monymusk, Aberdeen.  
 1951 GORDON, W. H., Jr. ; 4412 West Sixteenth Street, Lubbock, Texas, U.S.A.  
 1956 GORDON, W. O. ; 160 Wantirna Road, Ringwood, Victoria, Australia.  
 1954 GRAHAM, G. ; 56 Market Square, Duns, Berwickshire.  
 1956 GRAHAM, ROBERT C. ; June Road, Stamford, Conn., U.S.A.  
 1935 GRANT, FRANK ; Parklands, Stoughton Lane, Evington, Leicester.  
 1953 GRANTHAM, R. H. ; 13 St. Wilfrids Road, New Barnet, Herts.  
 1956 GRASSBY, J., F.R.H.S. ; "The Glen," Mobberley, Nr. Knutsford, Cheshire.  
 1956 GRAVEM, NICHOLAS, Jr. ; 200 Elm Avenue, Mill Valley, Calif., U.S.A.  
 1951 GRAY, J., A.R.I.B.A. ; "Braemar," Dryburn Road, Durham Moor, Durham.  
 1956 GREEN, Mrs. W. H. ; 8389 Redwood Avenue, Fontana, Calif., U.S.A.  
 1956 GREENHALGH, J. H. ; "Broadlands," Springbrook Lane, Earlswood, Warwicks.  
 1956 GREENSHIELDS, A. E. ; 50 Blight Street, Croydon, S. Australia.



- 1954 GREENWAY, K. W. ; "High Bank," Heath Road, Bladon, Oxford.  
 1952 GREGORY, J. J. ; 66 Carew Road, Hamden, Conn., U.S.A.  
 1954 GRELLIER, Mrs. R. ; Swindon Hall Farm, Swindon Village, Cheltenham.  
 1954 GREWCOCK, K. R. E. ; 36 Station Road, Marston Green, Nr. Birmingham.  
 1952 GRICE, H. ; Mount Pleasant, Hanging Grimston, Kirby Underdale, York.  
 1953 GRIFFITHS, A. V., F.Z.S., M.R.C.V.S. ; Bryn Awel, Llandyssul, Cards.  
 1946 GRIFFITHS, WILLIAM ; 19 Ethelbert Road, Wimbledon, London, S.W. 20.  
 1956 GRIMSHAW, H. G. ; The Ram Inn, The Rushes, Loughborough, Leicester.  
 1947 \*GRISWOLD, JOHN A. ; The Zoological Society of Philadelphia, 34th Street and Girard Avenue, Philadelphia 4, Pa., U.S.A.  
 1956 GRISWOLD, Professor OLIVER ; 4273 Ingraham Highway, Miami 33, Florida, U.S.A.  
 1956 GROEN, Dr. H. D. ; Rijksweg 252, Haren Gr., Holland.  
 1957 GROOM, CHARLES W. Jr. ; 34 Samuel Street, Peakhurst, Sydney, N.S.W. Australia.  
 1951 GROUND, W. J. ; "Albion House," 61 Pinchbeck Road, Spalding, Lincs.  
 1917 GROVES, Hon. Mrs. MCGAREL ; Battramsley House, Lymington, Hants.  
 1951 GRUBER, H. F., F.R.Z.S. (Scot.) ; 9 Churchill, Morningside, Edinburgh 10,  
 1951 GUDMUNDSSON, Dr. F., M.B.O.U. ; Museum of Natural History, P.O. Box 532, Reykjavik, Iceland.  
 1947 GULLIVER, V. S. ; 33 Vale Road, Aylesbury, Bucks.  
 1927 GURNEY, Miss DIANA ; North Runcion Hall, King's Lynn.  
 1956 GUTHRIE, JAMES K. ; 3150, Valencia Avenue, San Bernardino, Calif., U.S.A.  
 1942 GUY, CHARLES P. ; Lamorna Bird Farm, Combe-in-Teignhead, Newton Abbot, S. Devon.
- 1939 HADDEN, NORMAN G. ; Underway, West Porlock, Somerset.  
 1956 HADDOW, A. M. ; 23 Riverview Street, South Perth, Western Australia.  
 1952 HADLOW, L. A. ; Barbary Farm, Norton, Faversham, Kent.  
 1952 HADZIMA, J. ; 2059 Sweetwater Avenue, Spring Valley, California, U.S.A.  
 1956 HAFIDH, ABDULILAH, Governor of the Central Bank, Baghdad, Iraq.  
 1956 HAGAN, Miss MARY ; Lismara, Whiteabbey, Belfast, N. Ireland.  
 1951 HAITH, J. E. ; Park Street, Cleethorpes, Lincs.  
 1948 HALE, O. ; Laithfield, Digswell, Welwyn, Herts.  
 1955 HALL, D. B. ; 3 Rowdeford Cottages, St. Edith's Marsh, Bromham, Wilts.  
 1955 HALL, W. C. ; Arden House, 8 Randolph Road, London, W. 9.  
 1956 HALL-SMITH, Mrs. E. D. ; Deacons Hay, Chelwood Gate, Nr. Haywards Heath, Sussex.  
 1937 HALVERSON, A. W. ; 5705 West Erie Street, Chicago 44, Ill., U.S.A.  
 1926 HAMPE, ALEX ; 13a Grub am Forst bei Coburg, Bavaria, Germany.  
 1946 HANSEN, PAUL ; Gormsgade 3, I. Sal, Odense, Denmark.  
 1949 HANSEN, ROBERT J. ; P.O. Box 46, Gonzales, Calif., U.S.A.  
 1952 HANSEN, SVEND T. ; Ny Skelgaardsvej 21, Kastrup, Amager, Denmark.  
 1948 HARDY, G. C., Jr. ; 61 East 18th Avenue, New Westminster, B.C., Canada.  
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- 1956 HARRISON, D. J. ; No. 2. R.D., Minden, Tauranga, New Zealand.
- 1956 HARRISON, JAMES ; Carleton Hill, Penrith, Cumberland.
- 1956 HARRISON, J. F. ; Front Street, Haswell Moor, Haswell, Co. Durham.
- 1956 HARRISON, J. G., M.A., M.B., M.R.C.S., M.B.O.U. ; "Merriewood," St. Botolph's Road, Sevenoaks, Kent.
- 1955 HARTMANN, H. ; Ragnesminde, Glostrup, Denmark.
- 1956 HARTSHORNE, JAMES M. ; The Laboratory of Ornithology, Cornell University, Ithaca, New York, U.S.A.
- 1945 HARVEY, ARTHUR W. H. ; Rydal, Long Rock, Penzance, Cornwall.
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- 1956 HENRY, The Rev. B. C. R. ; 17 Station Road, Westgate-on-Sea, Kent.
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- 1956 HESSEY, M. ; Keepers' Lodge, Zoological Society of London, Regent's Park, N.W. 1.
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 1956 LONGHURST, Mrs. A. R. ; Landford Cottage, Landford, Nr. Salisbury, Wilts.  
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- 1953 MACPHIE, D. J. ; Hazel Cottage, Petersham, Surrey.
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- 1913 \*MAXWELL-JACKSON, Miss M., F.Z.S. ; Percy House, Scotton, Knaresborough, Yorks.
- 1922 \*MAYER, F. W. SHAW, C.M.Z.S. ; c/o Mr. R. W. Tebb, Lae, New Guinea, via Australia.
- 1955 MEES, G. F. ; Rijksmuseum van Natuurlijke Historie, Leiden, Holland.
- 1935 MERCK, Dr. WOLFGANG ; Rupert Strasse 55, Hamburg-Nieusteden, Germany.
- 1950 MERRY, C. ; 89 King William Street, Tunstall, Stoke-on-Trent.
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- 1953 OAKES, J. H. ; 93 Robinet Road, Beeston, Nottingham.
- 1956 OAKIE, WALTER V. ; Ransom Road, Winston-Salem, North Carolina, U.S.A.
- 1956 O'CONNELL, W. C. ; 2128 Dixie Highway, Fort Mitchell, Kentucky, U.S.A.
- 1955 OLIVER, C. ; 135 Mill Lane, Denton, Nr. Manchester.
- 1950 OLIVIER, GEORGES, F.Z.S., M.B.O.U. ; 6 rue Ch.-Flavigny, Elbeuf (Seine Inférieure), France.
- 1955 OLLEY, C. A. ; 163 Avon Road, Chelmsford, Essex.
- 1945 OLSON, LEO B. ; 835 South First Street, De Kalb, Illinois, U.S.A.
- 1952 OLSSON, C. J. ; Erik Dahlbergsgatan 19, Gothenborg, Sweden.
- 1955 O'NEILL, JORGE ; Largo do Conde Barão 5, Lisbon, Portugal.
- 1956 ORFORD, T. J. ; 14 Dean Street, Caringbah, N.S.W., Australia.
- 1956 ORLANDO, Dr. VITTORIO ; Via Roma 401, Palermo, Italy.
- 1954 ORSATTI, P. ; 97 Beaver Avenue, Toronto, Ontario, Canada.
- 1928 OSTREHAN, CLEMENT ; Kington Rectory, Worcester.
- 1947 OVEREND, Miss EUNICE ; 49 Alexandra Road, Frome, Somerset.
- 1953 OVERLÄNDER, D. ; Austrasse 17, Bad Honnef/Rhein, Germany.
- 1953 OZANNE, H. W. H. ; Istamboul Lodge, La Ramée, St. Peter Port, Guernsey, C.I.
- 1956 PACKER, DUDLEY W. ; Main Road, Paradise, South Australia.
- 1956 PAGE, Mrs. B. V. ; "Greenanore," Tewin Wood, Welwyn, Herts.
- 1956 PAGE, W. J. ; EDITOR *Cage Birds*, Dorset House, Stamford Street, London, S.E. 1.
- 1956 PALLETT, L. E. ; "Peter Pan," 8 Twynham Road, Maidenhead Berks.
- 1944 PALMELLA, The Duke of, F.Z.S. ; 116 Rua Escola Polytechnica, Lisbon, Portugal.
- 1955 PALSSON, W. F. ; Halldorsstadir, Laxardal, via Husavik, Iceland.
- 1950 PANTING, PETER J., B.Sc. ; "Belle Vue," Main Street, Goodwick, Pems.
- 1957 PAPÉ, T. V. F. ; "Hollington," Kimbolton Road, Bedford.
- 1954 PARIS, P. G. ; Boskenna, St. Buryan, Cornwall.
- 1956 PARKES, Dr. K. C. ; Carnegie Museum, Pittsburgh 13, Pennsylvania, U.S.A.
- 1950 PARREN, R. J. ; Avenue House, Tenmpon Road, King's Lynn, Norfolk.



- 1956 PARSONS, E. RUSSELL ; "Swanwic House," Swanage, Dorset.  
 1952 PARTRIDGE, P. B. ; 164 Waverley Avenue, Twickenham, Middx.  
 1934 PARTRIDGE, W. R., F.Z.S. ; The Bungalow, Lower Haseler, Nr. Evesham, Worcs.  
 1952 PATTEN, R. A., B.V.Sc. ; "Dunromin," Windsor Road, Kellyville, N.S.W., Australia.  
 1949 PAYN, Major W. H., M.B.E., M.B.O.U. ; Hartest Place, Bury St. Edmunds, Suffolk.  
 1950 PAYNE, C. M. ; The Malt House, Barford, Warwick.  
 1955 PAYNE, Mrs. C. M. ; The Malt House, Barford, Warwick.  
 1951 PEARSON, J. C., A.R.S.G.B. ; Southern Kinta Consolidated Ltd., Southern Kampar Section, Tanjong Tualang, Perak, Malaya.  
 1946 PEARSON, RAYMOND ; 179 West Auckland Road, Darlington, Co. Durham.  
 1940 PEAT, RODERICK M., F.Z.S. ; 11 Ironmonger Lane, London, E.C. 2.  
 1956 PELCH, WILLIAM E. ; 5016 West 25th Place, Cicero 50, Ill., U.S.A.  
 1953 PERRY, J. A. W. ; 14 New Way, Pinelands, Nr. Cape Town, S. Africa.  
 1956 PETERS, Mrs. MARGARET F. ; Plashett Park Farm, Ringmer, Nr. Lewes, Sussex.  
 1956 PETTER, E. R. ; 9 Short Street, Harden, N.S.W., Australia.  
 1954 PHILLIPS, Miss R. F. ; 488 Shirley Road, Hall Green, Birmingham, 28.  
 1935 PHIPPS, Mrs. L. N., F.Z.S., M.B.O.U. ; The Manor House, Minster Lovell, Oxon.  
 1956 PIERCE, ROLAND L. ; R.F.D. 5, Princeton, Ill., U.S.A.  
 1955 PIGG, N. ; 3427 McCormick Avenue, Hollywood, Ill., U.S.A.  
 1954 PILCHER, R. E. M., M.A., F.R.C.S. ; The Meadows, 39 Spilsby Road, Boston, Lincs.  
 1956 PILLING, C. A. ; 1612 N. 90th Street, Seattle 3, Washington, U.S.A.  
 1934 PITT, W. S. ; Wildwood, Silverdale Avenue, Walton-on-Thames, Surrey.  
 1924 PLATH, K. ; 114 S. East Avenue, Oak Park, Ill., U.S.A.  
 1956 PLUMB, T. R. ; The Cayley Arms, Rhos-on-Sea, Colwyn Bay, N. Wales.  
 1947 PODMORE, C. R. ; 49 Greystones Grange Road, Ecclesall, Sheffield 11.  
 1949 POHLE, Prof. HORST C. ; Teachers' Training College (P.T.P.G.), Tondano, North Celebes, Indonesia.  
 1937 POLAK, Dr. A. C. ; Spoorstraat 15, Amersfoort, Holland.  
 1925 POLTIMORE, Lady ; Benwell, P.O. Box 6, Bindura, Southern Rhodesia.  
 1956 POND, G. W. ; 50 Malherbe Street, Capital Park, Pretoria, Transvaal, South Africa.  
 1955 PONTING, A. G. ; North Owersby, Lincoln.  
 1956 POPE, P. A. ; 13 Torrington Road, Ashford, Kent.  
 1956 PORTER, G. J. C. ; 62 New Park Avenue, Palmers Green, N. 13.  
 1920 PORTER, SYDNEY, F.Z.S., M.B.O.U. ; The White Gates, 149 Stenson Road, Derby.  
 1914 POTTER, BERNARD E., M.B., M.R.C.S., L.R.C.P., F.Z.S. ; 39 Devonshire Place, London, W. 1.  
 1956 POTTER, J. ; Linden, Chase Ridings, Enfield, Middx.  
 1956 POTTER, Mrs. J. ; Linden, Chase Ridings, Enfield, Middx.  
 1956 POWE, Mrs. M. ; Pythingdean, Pulborough, Sussex.  
 1956 POWER, P. C. ; The Tan House, Lapworth, Warwicks.  
 1956 POWERS, JAMES F. ; 736 Martin Blvd., San Leandro, Calif., U.S.A.  
 1956 PRATT, L. ; 8 Barremma Road, Lakemba, N.S.W., Australia.  
 1928 \*PRESTWICH, ARTHUR A. ; 61 Chase Road, Oakwood, N. 14.  
 1951 PRIEST, Dr. A. A. ; 434-6 Acheson Building, 2131 University Avenue, Berkeley 4, Calif., U.S.A.

- 1954 PRIP, F. ; Adolphsvej 39, Gentofte, Denmark.  
 1956 PRITCHARD, J. P. ; Bordertown, South Australia.  
 1956 PURDY, R. F. W. ; 51 Prince George's Avenue, Raynes Park, London, S.W. 20.  
 1953 PYE, Brigadier RANDALL, D.S.O. ; Avenings Farm, Daneshill, Sussex.
- 1948 QUENBY, H. F. ; "Standard" House, High Street, Baldock, Herts.  
 1913 QUINCEY, R. S. DE Q., F.Z.S. ; The Vern, Bodenham, Hereford.
- 1948 RABBIN, HILBERT J., I.S.O., F.Z.S. ; 33 Kingsway, Wembley.  
 1956 RADEMACHER, PERRIN G. ; 1700 Manchester Road, Wheaton, Ill., U.S.A.  
 1954 RAEVEN, Dr. M. A. ; Houwelingenplantsoen 8, Vught, 's Hertogenbosch, Holland.  
 1949 RAGAN, CALVIN ; P.O. Box 7, Bell, California, U.S.A.  
 1956 RAMSDEN, J. ; "Millbrook," Benton Park, Harrogate Road, Rawdon, Nr. Leeds.  
 1954 RANDAU, G. ; Avenida Rui Barbosa 500, Recife, Pernambuco, Brazil.  
 1943 RANKIN, Lieut.-Col. N., F.R.G.S., F.R.P.S. ; House of Treshnish, Calgary, Isle of Mull, Argyll, Scotland.  
 1950 RATH, JOSEPH ; Maria Lutzst. 9, Pfaffenhofen-Jlm (Oberbayern), Germany.  
 1939 RAVEN, WILLIAM H., O.B.E. ; Meadow Cottage, Church Walk. Wellesbourne, Nr. Warwick.  
 1948 RAY, Mrs. V. E. ; Hulwating Tea Estate, Amhuri P.O., Assam, India.  
 1950 RAYMAEKERS, L. ; 71 Avenue Molière, Brussels, Belgium.  
 1947 REAY, J. H. ; Cranmore, The Close, Hillingdon, Middx.  
 1956 REBELLO, STEPHEN ; 1448 Grand Army Highway, Somerset, Massachusetts, U.S.A.  
 1955 REDMAN, D. S., F.Z.S. ; Bleak Hall, Biggleswade, Beds.  
 1954 REED, Miss A. ; Apt. 10, Queen's Court, 581 Jarvis Street, Toronto, Ontario, Canada.  
 1956 REED, R. C. ; 11 Montah Avenue, Killara, N.S.W., Australia.  
 1950 REES, F. A. D. ; Leckford, Stockbridge, Hants.  
 1956 REEVE, J. M. ; Ash Lea, New Station Road, Bolsover, Nr. Chesterfield.  
 1956 REID, G. ; "Grassington," Rotherham, North Canterbury, New Zealand.  
 1939 REID, Miss MARION C. ; c/o Messrs. John Reid, Ltd., Walt Street, Newcastle, N.S.W., Australia.  
 1951 REID-HENRY, D. M. ; 43 West View Drive, Woodford Green, Essex.  
 1951 RENDELL, R. G. ; 60 Guinions Road, High Wycombe, Bucks.  
 1946 RICARDO, Mrs. MARY C. ; Audreys, Burghfield Common, Reading, Berks.  
 1950 RICH, JOSEPH W. ; 1073 West 11th Street, San Pedro, Calif., U.S.A.  
 1949 RICHARDSON, JAMES ; Spencer House, 101 Stockton Lane, York.  
 1955 RICHARDSON, J. ; 106 Bransty Road, Whitehaven, Cumberland.  
 1953 RIDLEY, C. T. ; Birdwarren Farm, Varsity View P.O., Box 217, Charleswood, Manitoba, Canada.  
 1954 RIGGE, J. S. ; Old Broadgate, Millom, Cumberland.  
 1948 RIIS-HANSEN, KAI ; Nørre Alle 75, Glostrup, Denmark.  
 1956 RILEY, E. ; Outgate, Birkwray, Nr. Ambleside, Westmorland.  
 1937 \*RIPLEY, S. DILLON, Ph.D., M.B.O.U. ; Kilravock, Litchfield, Conn., U.S.A.  
 1935 RISDON, D. H. S. ; The Dudley Zoological Society, Dudley, Worcs.  
 1956 RITCHIE, D. ; 66 Boronia Road, Boronia, Victoria, Australia.

- 1943 ROBERTSON, Dr. A. R. ; P.O. Box 95, Kroonstad, O.F.S., South Africa.  
 1947 ROBINSON, B. E. ; Field House, Blackborough Road, Reigate, Surrey.  
 1951 ROBINSON, G. E. ; 487 Little Horton Lane, Bradford.  
 1953 ROBINSON, H. A. ; 903 Arcadia Avenue, Arcadia, Calif., U.S.A.  
 1956 ROBINSON, Mrs. J. E., F.Z.S. ; Flat 1, 63 Nightingale Lane, Balham, S.W. 12.  
 1927 ROBISON, A. W. ; 125 Maiden Lane, San Francisco 8, Calif., U.S.A.  
 1952 RODGERS, J. ; 39 Fore Street, Totnes, Devon.  
 1956 ROGER, A. S. ; 16 Walton Street, London, S.W. 3.  
 1956 ROHRIG, S. H. ; 12 Fisk Avenue, Glengowrie, South Australia.  
 1955 ROKOSKY, EMIL J. ; Racine Zoological Park, 2131 North Main Street, Racine, Wis., U.S.A.  
 1951 ROLPH, W. ; Undley Lodge, Lakenheath, Suffolk.  
 1945 ROONEY, JAMES P., M.B.O.U. ; 1514 South 12th Avenue, Yakima, Washington, U.S.A.  
 1946 ROOTE, CYRIL C. ; 116 Cardinal's Walk, Scraftoft Lane, Leicester.  
 1954 ROSE, W. H. ; 44 Sapcote Road, Hinckley, Leics.  
 1956 ROSSEEL-NEYRINCK, V. ; Iseghemstraat 287, Rumbek, Belgium.  
 1954 ROSSITER, Dr. N. A. ; Colonial Mutual Bldg., West Street, Durban, Natal, S. Africa.  
 1953 ROTERS, J. ; Elk Lumber Co., Box 170, Temiskaming, Quebec, Canada.  
 1956 ROTHERWICK, Lord ; Sedgwick Park, Horsham, Sussex.  
 1954 ROTHWELL, Dr. K. G. ; 51 Lutterworth Road, Leicester.  
 1954 ROUILLARD, J. V. ; P.O. Box 72, Stanger, Natal, S. Africa.  
 1956 ROUSE, O. ; "Mirasol," Frithwood Lane, Billericay, Essex.  
 1951 ROYDEN, T. W. E. ; Broad House, Fleggburgh, Norfolk.  
 1952 RUDKIN, F. H., Jr. ; 3rd and Fillmore Streets, Fillmore, California, U.S.A.  
 1950 RUSSELL, BARNABAS, F.R.S.A., F.Z.S., F.R.H.S. ; 20 Bucklersbury, Hitchin, Herts.  
 1956 RUSSELL, K. ; "Rafso Cottage," Outwell, Nr. Wisbech, Cambs.  
 1954 RUTGERS, A. ; Boeckenrode, Joppe, Holland.  
 1927 RYCROFT, Mrs. V. ; 8 The Mead, Cirencester, Glos.  
 1954 SALMON, W. G. ; Angle Lake, Cranbrook, Kent.  
 1956 SALTER, Miss G. ; "The Flat," Primley House, Paignton, Devon.  
 1951 SALTER, D., F.Z.S. ; 44 Montrose Terrace, Edinburgh 7.  
 1955 SANDERSON, S., 33 Cardinal Avenue, Boreham Wood, Herts.  
 1953 SANDS, W. M., F.Z.S. ; Silver Birches, Farrar Lane, Adel, Leeds 16.  
 1956 SANKEY, P. H. ; Tamworth House Restaurant, Hunstanton, Norfolk.  
 1945 SAUNDERS, RONALD, F.Z.S. ; Regent Parade, Sycamore Road, Amersham, Bucks.  
 1956 SAVORY, Major R. G. H., F.I.A.I., F.R.E.S. ; 138 Hatch Road, Pilgrims Hatch, Brentwood, Essex.  
 1950 SAWDEN, M. ; "The Gardens," Uddens, Nr. Wimborne, Dorset.  
 1949 \*SAWYER, R. C. J., F.Z.S. ; 226 Haggerston Road, London, E. 8.  
 1954 SCAMELL, K. M., O.B.E. ; Woodbury Cottage, Broad Lane, Newdigate, Surrey.  
 1953 SCAMELL, Mrs. K. M. ; Woodbury Cottage, Broad Lane, Newdigate, Surrey.  
 1956 SCHLESSELMAN, Dr. EDMOND A., M.D. ; 450 Blackstone Avenue, Fresno, Calif., U.S.A.  
 1949 SCHNEIDER, P. E. ; 5113 No. Acacia Street, San Gabriel, Calif., U.S.A.  
 1955 SCHOMBERG, G. ST. GEORGE ; 64 Addison Road, London, W. 14.

- 1951 SCHUMACHER, Mrs. H. L. ; 7027 Sycamore Avenue, Seattle 7, Washington, U.S.A.
- 1954 SCHUSTER, Dr. H. ; 3 rue Maurice Barrès, Saint-Avoid, Moselle, France.
- 1914 SCHUYL, D. G. ; Kralingscheweg 332, Rotterdam O, Holland.
- 1934 SCOTT, A. H., F.Z.S. ; Abbotswell, Frogham, Fordingbridge, Hants.
- 1938 \*SCOTT, PETER, C.B.E., D.S.C., M.A., F.Z.S., M.B.O.U. ; The New Grounds, Slimbridge, Gloucestershire.
- 1952 SCOTT, R. A. ; 1 Lambton Road, Broadmeadow, N.S.W., Australia.
- 1956 SCOTT, The Hon. Mrs. R. M. ; North Runcion Hall, King's Lynn, Norfolk.
- 1956 SCOTT, W. G. ; 1 Maranoa Crescent, Coburg, Melbourne, Victoria, Australia.
- 1928 SCOTT-HOPKINS, Capt. C., F.Z.S. ; Knoll House, Shiplake, Oxon.
- 1956 SCOURFIELD, J. G. ; 6 Oaklands Avenue, Dialstone Lane Stockport, Cheshire.
- 1955 SCRAGG, D. G., F.Z.S., F.R.H.S. ; 4 Drakefield Road, Liverpool 11.
- 1951 SEAGO, J., F.Z.S. ; Hall Common, Ludham, Norfolk.
- 1954 SEARLE, K. C., M.B., B.S., C.M.Z.S. ; Windsor House, Victoria, Hong Kong.
- 1951 SEARS, JOHN L. ; Reel Hall, Shamley Green, Guildford, Surrey.
- 1956 SECCULL, E. A. ; 6 Cromwell Road, Banbury, Oxon.
- 1956 SERJEANTSON, Major J. M. ; Yed Hill, Ringwood, Hants.
- 1953 SEWELL, W. A., F.R.Z.S. ; Pleasley Road, Skegby, Sutton-in-Ashfield, Notts.
- 1956 SEXTON, J. ; 49 Cross Roads, Maldon, Essex.
- 1951 SHAFFER, B. ; 3006 South West Temple, Salt Lake City, Utah, U.S.A.
- 1956 SHARP, J. ; Rosella, Orchard Road, Forres, Morayshire.
- 1954 SHARPE, W. G. ; 6 High Street, Flitwick, Bedford.
- 1932 SHEARING, A. P. ; Corner Cottage, Woodlands Park, Woodlands Lane, Stoke d'Abernon, Cobham, Surrey.
- 1949 \*SHEFFLER, WILLIAM J. ; 4731 Angeles Vista Boulevard, Los Angeles 43, Calif., U.S.A.
- 1951 SHELLIM, Dr. M. A. ; c/o The Eastern Bank, Ltd., 2-3 Crosby Square, London, E.C. 3.
- 1956 SHEPPARD, J. L. ; 9 Gardeners Road, Benteigh East, Melbourne, Victoria, Australia.
- 1956 SHEPPERSON, L. ; The Chestnuts, March, Cambs.
- 1956 SHERREN, R. ; Kingsdale, Watford-by-Pass, Watford.
- 1953 SHOLAR, Dr. N. P., D.D.S. ; Box 265, Mooresville, N.C., U.S.A.
- 1953 SHONAMAN, W. ; 1890-21 Avenue, New Westminster, B.C., Canada.
- 1955 SHYNAL, J. ; 48 Holly Avenue, Hamilton, Ontario, Canada.
- 1946 SIBLEY, A. E., F.Z.S. ; 7 Alexandra Gardens, Hounslow, Middx.
- 1956 SIMMONS, K. ; 6 Kenpas Highway, Coventry, Warwicks.
- 1955 SIMMONS, K. E. L. ; Lamorna, Beechwood Ave., Tilehurst, Reading, Berks.
- 1956 SIMMONDS, S. C. ; 99 Court Lane, Dulwich, S.E. 21.
- 1956 SIMÕES, FRANCISCO ; Quinta das Terras, Pinheiro de Loures, Portugal.
- 1953 SIMÕES, J. F. ; L. do Conde Barão 5, Lisboa, Portugal.
- 1924 SIMPSON, H. W. ; 6 Barry Road, Stonebridge, Willesden, N.W. 10.
- 1947 SLADER, W. T., J.P. ; Pentillie, Honiton Road, Exeter.
- 1956 SLATER, C. ; 12 Moorland View, Gleadless, Sheffield 12.
- 1954 \*SLOTTER, Mrs. C. F. ; Hopewell, New Jersey, U.S.A.
- 1954 SMART, T. E. ; Castlemead, Tenbury Wells, Worcs.
- 1956 SMITH, B. G. ; 17 Kingsclere Avenue, Corner Hawkley Green, Weston, Southampton.

- 1955 SMITH, CARLETON F. ; 625 Kenmore Drive, San Gabriel, Calif., U.S.A.  
 1941 SMITH, E. WILFORD ; "Lynwood," 15 Kingsway Road, Leicester.  
 1954 SMITH, F. ; 12 Nabs Head Lane, Samlesbury, Nr. Preston, Lancs.  
 1956 SMITH, H. ; 42 Priory Road, St. Denys, Southampton.  
 1947 SMITH, KENNETH J., F.Z.S. ; Paignton Zoological Gardens, Paignton, Devon.  
 1955 SMITH, R. G. ; 247 Gladstone Avenue, Wood Green, London, N. 22.  
 1952 SMITH, STANLEY ; 79 Anson Road, Singapore 2, Malaya.  
 1917 SMITH, W. PROCTER, F.Z.S. ; Bexton House, Knutsford, Cheshire.  
 1953 SNAZZLE, H. A., M.B.E., F.Z.S. ; Chessington Zoo, Ltd., Leatherhead Road, Chessington, Surrey.  
 1956 SNYDER, DON ; 315 Linden Walk, Lexington, Kentucky, U.S.A.  
 1946 SOANES, ARTHUR C. ; The Fishery Inn, Elstree, Herts.  
 1950 SOAR, E. R. ; 233 Long Lane, Hillingdon, Middx.  
 1952 SPEED, Mrs. D. A. ; 925 Clinton Avenue, Fresno, California, U.S.A.  
 1951 SPEEL, C. ; Saxenburgerweg 9, Bloemendaal, Holland.  
 1954 SPENCE, J. M. ; c/o P.E. Museum and Snake Park, 28 Bird Street, Port Elizabeth, S. Africa.  
 1952 SPENCE, T., M.R.C.V.S. ; Dunbog, Newburgh, Fife, Scotland.  
 1956 SPERLING, E. ; 62 Wheatley Road, Welwyn Garden City, Herts.  
 1953 SPILSBURY, D. T. ; "Hill View," 12 Upper Howsell Road, Malvern Link, Worcs.  
 1923 SPURWAY, N. B. ; "The Hermitage," Oadby, Leicestershire.  
 1939 SQUIRE, E. O. ; Bassmead, St. Neots, Hunts.  
 1954 STAPLES, H. A. ; 461 East Sacramento Avenue, Chico, Calif., U.S.A.  
 1956 STANFORTH, B. G. ; 10 Lyme Road, Ampthill, Beds.  
 1956 STEEL, NEWTON R., N.D.A. ; The Hookland Estate, Scaynes Hill, Haywards Heath, Sussex.  
 1954 \*STEPHAN, H. C. ; "Hathersage," Gordons Road, Somerset West, C.P., S. Africa.  
 1953 STEVENS, A. ; 56 Gwencole Crescent, Braunstone, Leicester.  
 1932 STEVENS, RONALD ; Walcot Hall, Lydbury North, Shropshire.  
 1956 STEYN, B. ; c/o Steyns Foundry Pty, Ltd., 242 Edison Road, Pretoria, S. Africa.  
 1953 STIVEN, H. ; c/o Shell Co. of W.A., Ltd., P.H.B. 2052, Lagos, Nigeria.  
 1956 STOBART, J. D. W. ; Bevern Bridge House, Chailey, Sussex.  
 1952 STODDART, R. W. ; Grey Lynn, Flatts Lane, Normanby, Nr. Middlesbrough, Yorks.  
 1922 STOKES, Capt. H. S., M.C., F.Z.S. ; Longdon, Rugeley, Staffordshire.  
 1953 STONE, M. B., Jr. ; Martin's Pond Road, Groton, Mass., U.S.A.  
 1929 STONEY, Miss I. ; Central Lodge, 55 Central Hill, Upper Norwood, London, S.E. 19.  
 1928 STORMONTH-DARLING, P. ; 7 Egerton Court, Harrington Road, London, S.W. 7.  
 1955 STRACHAN, Mrs. B. G. ; The Garden Cottage, Thornsflush, Cranleigh, Surrey.  
 1951 STRAIGHT, WHITNEY, C.B.E., M.C., D.F.C., F.Z.S. ; The Aviary, Windmill Lane, Southall, Middx.  
 1948 STRANGE, FRANK E. ; P.O. Box 207, Redondo Beach, California, U.S.A.  
 1956 STRANN, MELVILLE M. ; 8729 Shoshone Avenue, Northridge, Calif., U.S.A.  
 1948 STRETCH, H. ; 119 Wilton Road, Salisbury.  
 1955 STROLLO, J. J. ; Box 577, Hq. Far East Air Forces, A.P.O. 925, San Francisco, Calif., U.S.A.  
 1930 STROMBI, Miss DORA A. ; Eastbank House, Brechin, Angus.

- 1956 STROUD, Mrs. F. ; 105 Priory Road, Hastings, Sussex.  
 1949 STRUTT, Hon. PETER A. ; Bentley Park, Ipswich, Suffolk.  
 1950 STURGIS, A. F. ; 740 Sansom Street, Philadelphia 6, Pa., U.S.A.  
 1956 STYLES, A. E. ; 4 St. Marys Avenue, Stony Stratford, Wolverton, Bucks.  
 1952 SUNDSTRÖM, Miss BRITT-MARIE ; Östra Larmgatan 3, Göthenburg, Sweden.  
 1938 SUTTON, PETER, M.R.C.V.S. ; 11 Culverden Park Road, Tunbridge Wells.  
 1955 SUTTON, Mrs. P., M.R.C.V.S. ; 11 Culverden Park Road, Tunbridge Wells.  
 1951 SVANE, C. H. ; Frederikssundsvej 168, Brønshøj, Copenhagen, Denmark.  
 1902\*\*SWAN, J. A., F.Z.S. ; Hazel Mere, Rectory Lane, Sidcup, Kent.  
 1950 SWAN, Mrs. J. A. ; Hazel Mere, Rectory Lane, Sidcup, Kent.  
 1956 SWEET, R. F. ; 6 Crofts End, Sherington, Nr. Newport Pagnell, Bucks.  
 1956 SYKES, CLIFFORD ; Route 1, Box 350, Kenosha, Wisconsin, U.S.A.  
 1948 SYKES, JOSEPH ; 167 North High Street, Musselburgh, Scotland.  
 1955 TACK, J. ; Tyting Garage, St. Martha's, Guildford, Surrey.  
 1946 TANGRED, P. H. ; 19 Hardy Street, Ashfield, Sydney, N.S.W., Australia.  
 1954 TATT, R. H. ; The Willows, Railway Road, Downham Market, Norfolk.  
 1956 TAYLOR B. P. ; The Ridge, Forest Way, Tunbridge Wells, Kent.  
 1956 TAYLOR, E. L., C.B.E., D.Sc. ; "The Mu," Brook, Albury, Nr. Guildford, Surrey.  
 1956 TAYLOR, H. E. DAVIES ; "Shelsley," Bishop's Castle, Shropshire.  
 1946 TAYLOR, JAMES, M.B.O.U. ; Lower Hilcot, Withington, Cheltenham, Glos.  
 1956 TAYLOR, JOHN, Jr. ; 213 Arundel Street, Landport, Portsmouth, Hants.  
 1956 TAYLOR, JOHN W. ; 1643 Franklin Street, N.E., Washington 18, D.C., U.S.A.  
 1952 TAYLOR, R. A., F.Z.S. ; 28 Castledon Road, Wickford, Essex.  
 1956 TAYLOR, S. E. ; "Brocton," Kilcreene New Road, Kilkenny, Eire.  
 1945 TAYLOR, T. G., M.A., Ph.D. ; 16 Derby Road, Caversham, Reading.  
 1954 TEAGLE, W. G. ; Flat 6, 2 The Paragon, Blackheath, S.E. 3.  
 1930 TEAGUE, P. W. ; Rowlestone, Southdowns Road, Dawlish Devon.  
 1954 TEMLETT, H. ; Doves Rest, P.O. Box 37, Maseru, Basutoland, S. Africa.  
 1926 TENNANT, Hon. STEPHEN ; Wilsford Manor, Salisbury.  
 1952 THEAKER, J. N. ; The Grove, Swadlincote, Nr. Burton-on-Trent.  
 1949 THOMAS, A. E. ; Burnt House, Chigwell, Essex.  
 1949 THOMAS, RAY ; 600 Sarbonne Road, Bel-Air, Los Angeles 24, Calif., U.S.A.  
 1956 THOMAS, R. ; 28 Dene Road, Northwood, Middx.  
 1950 THOMPSON, LLOYD B. ; 2010 Cliff Avenue, North Burnaby, Vancouver, B.C., Canada.  
 1956 THORNLEY, ELLIS W. ; 23 Mitchell Road, Brookvale, Sydney, N.S.W., Australia.  
 1956 THORP, AUBREY N.C. ; P.O. Box 20, Maseru, Basutoland, South Africa.  
 1954 THORPE, J., F.R.E.S. ; Dean Cottage, Pleasant Style, Littledean, Gloucestershire.  
 1956 TILLEY, R. ; 45 Rue Calamine, Stembert, Verviers, Belgium.  
 1954 TIMMIS, W., F.Z.S. ; c/o Mayfield Cottage, Hoole Village, Hoole, Chester.  
 1946 \*TINSLEY, PATRICK C. ; Hurn Hall, Holbeach, Spalding, Lincs.  
 1946 \*TINSLEY, WILLIAM G. ; The Poplars, Holbeach, St. Marks, Lincs.  
 1956 TIPÀ, ANDREA ; Via Priaruggia 11/2, Genoa, Italy.  
 1956 TODD, A. M. ; 71 Glendower Avenue, Coventry, Warwickshire.  
 1952 TOLLEMACHE, Lord, M.C. ; Helmingham Hall, Stowmarket, Suffolk.

- 1956 TOMSKI, Dr. RICARDO ; Caixa Postal 22, Copacabana, Rio de Janeiro, Brazil.
- 1950 TONG, E. H. ; Zoological Society of London, Whipsnade Park, Nr. Dunstable, Beds.
- 1955 TOPLIS, D. N. V. ; The Cottage, Hill Brow, Liss, Hants.
- 1955 TOWNSEND, G. F. ; 94 Littledean Hill, Cinderford, Glos.
- 1954 TRAYLER, Miss N. E. ; 20 Kensington, Bath.
- 1951 TREVISICK, C. H., F.Z.S. ; Ilfracombe Zoo Park, Comyn Hill, Ilfracombe, North Devon.
- 1952 TROUBRIDGE, Lady ; Middle Oakshott, Hawkley, Liss, Hants.
- 1947 \*TUCKWELL, DAVID ; Asliesk, Alves by Forres, Morayshire.
- 1939 TUNESI, A. W. ; Elmside, 93 Vicarage Road, Sunbury-on-Thames, Middx.
- 1928 TURNER, H. B., M.B.O.U. ; Malverleys, Nr. Newbury, Berks.
- 1956 TURNER, S. E. ; 22 Loxwood Road, Tottenham, N. 17.
- 1930 \*TURNER, WALTER H. ; 15 Sutherland Road, Chatswood, N.S.W., Australia.
- 1955 TWELL, J. W. ; Caravan, Clay Lane, Marlow, Bucks.
- 1954 TWYFORD, Lady IDA ; Wychwood Farm, Shermanbury, Nr. Horsham, Sussex.
- 1934 TYEBJEE, ABDE AMIRUDIN SHALEBHOY ; Malabar Court, Malabar Hill, Ridge Road, Bombay 6, India.
- 1954 TYRELL, T. H. ; Bridge House, Brydekirk, Annan, Dumfriesshire.
- 1956 TYRRELL, R. J. ; 17 Milton Street, Roslyn, Palmerston North, New Zealand.
- 1954 \*ULLENS DE SCHOOTEN, C. A., F.Z.S. ; Les Bouleaux, Quatre-Bras, Crainhem, Brabant, Belgium.
- 1956 UNDERWOOD, Sgt. F. W. ; 76345 R.N.Z.A.F., Hobsonville, Nr. Auckland, New Zealand.
- 1955 UPTON, Mrs. P. V., M.B.O.U. ; Park Lodge, Margaretting, Ingatestone, Essex.
- 1955 USHER, P. ; 47 Edinburgh Drive, Kirton, Boston, Lincs.
- 1954 VADEN, J. M. ; 2533 S. 3rd Street, Abilene, Texas, U.S.A.
- 1947 VALLEN, J. H. J. M., M.D. ; Antoniuslaan 105, Blerick-Venlo, Holland.
- 1954 VAN DAM, G. TH. ; Zoo-Centrum, Aalten, Holland.
- 1949 VAN DEN BERGH, WALTER, C.M.Z.S., C.M.R.Z.S.(Scot.) ; Société Royale de Zoologie d'Anvers, 26 Place Reine Astrid, Antwerp, Belgium.
- 1953 VAN DEN BRINK, G. ; Soesterbergsestraat 111, Soest, Holland.
- 1953 VAN DER MARK, R. R. P. ; De Kweekhoeve, van Helvoortlaan 31, Woerden, Holland.
- 1956 VAN DIJK, C. ; Avicentra, Schilde, Antwerp, Belgium.
- 1950 VAN DIJK, H. C. ; Fabriekstraat 6, Tilburg, Holland.
- 1948 VAN DIJK, H. J. ; Animali, Eindhoven, Holland.
- 1950 VAN DIJK, N. ; Bisschop Aelenstraat 50, Tilburg, Holland.
- 1937 VANE, E. N. T., F.Z.S. ; Fairacre, Chiltern Road, Ballinger, Gt. Missenden, Bucks.
- 1955 VAN GIJSEGEM, P. ; O.L. Vrouwlaan 108, Evere, Belgium.
- 1934 VAN HEYST, A. F. C. A. ; No. 12, Plesmanlaan, Bussum, Holland.
- 1956 VAN HEYST, H. P. ; Huize "de Kimpenkamp," Groenlo, Holland.
- 1957 VAN HOFWEGEN, H. P. A. L. ; D. Stalpertstraat 104-111, Amsterdam, Holland.
- 1950 VAN LEEUWEN, J. DOCTERS ; Hoveniersweg 37, Tiel, Holland.
- 1955 VAN MAARION, W. ; Nelson Aviaries, 715-6th Street, Nelson, British Columbia, Canada.

- 1953 VAN OOSTEN, J. R. ; 1034 Isabelle, Coronado, Calif., U.S.A.  
 1951 VAN VOLLENHOVEN, P. ; Burgem Knappertlaan 128, Schiedam, Holland.  
 1951 VAN WACHEM, R. H. ; Joh. Geradtsweg 44, Hilversum, Holland.  
 1955 VELD, S. A. MAN IN'T ; "Eikenoord," Deventerstraat 494, Apeldoorn, Holland.  
 1956 VERITY, Miss M. H. ; 364 Selby Road, Whitkirk, Nr. Leeds, Yorks.  
 1956 VERMET, D. ; Landgoed "Zoomland," Bergen op Zoom, Holland.  
 1928 VIERHELLER, GEORGE P. ; St. Louis Zoological Park, St. Louis 10, Mo., U.S.A.  
 1947 VINSON, MARK ; The Beeches Farm, Cowden, Edenbridge, Kent.  
 1954 VLEMMIX, H. P. ; "Simba" Vogels en Dieren, Bisschop Zwijzenstraat 116, Tilburg, Holland.  
 1936 VOY, Miss HILDA ; Lynchets, Longbridge Deverill, Warminster, Wilts.  
 1948 VUCOVICH, PAYSON ; 15731 Fargo Avenue, Hanford, California, U.S.A.  
 1948 WADDAMS, W. LAWSON ; 34 Thurlston Avenue, Sheldon, Birmingham 26.  
 1956 WAGAR, R. ; 4106-51st Street, Red Deer, Alberta, Canada.  
 1956 WAH, LIM KOON ; P.O. Box 1405, Singapore, Malaya.  
 1955 WAHLGREN, J. O. ; 24 Garth Road, Kingston-on-Thames, Surrey.  
 1947 WAIT, F. R., F.Z.S. ; "Thorneycroft," 17 Hillway, Woburn Sands, Bucks.  
 1952 WAITE, J. ; 6 Attwood Street, Kidsgrove, Staffs.  
 1948 WAKEFIELD, Mrs. C. H. ; 139 Senic Drive, Palomar Park, Redwood City, California, U.S.A.  
 1955 WALKER, Miss A. ; Bluegum Road, Paraparaumu Bch., New Zealand.  
 1936 WALLER, H., F.Z.S. ; Oldway, Pilgrims Way, Westhumble, Dorking, Surrey.  
 1951 WALLIN, Mrs. O. H. ; 11543-36 N.E., Seattle 55, Washington, U.S.A.  
 1951 WALMSLEY, J. H. ; P.O. Box 1368, Port Elizabeth, Cape Province, S. Africa.  
 1954 WALTER, C. N., F.S.A.A., M.B.O.U. ; 32 Stanley Avenue, Beckenham, Kent.  
 1952 WARING, S. D. ; 13 Oakhill Road, Maghull, Nr Liverpool, Lancs.  
 1955 WARNER, H. G. ; 83 Sherbourne Road, Bushbury, Wolverhampton, Staffs.  
 1956 WARNER, Mrs JEAN S. ; 21 Hope Terrace, Edinburgh 9.  
 1935 WARRE, Mrs. PHILIP ; Coppid Hall, Stifford, Essex.  
 1952 WASTELL, C. H. ; "Mon Abri," Stapleford Abbots, Romford, Essex.  
 1956 WASTELL, Mrs. C. H. ; "Mon Abri," Stapleford Abbots, Romford, Essex.  
 1956 WATERSTON, G., F.R.S.E., M.B.O.U. ; 5 Charlotte Square, Edinburgh 2.  
 1932 WATKINS, T. R. HOLMES ; Oronsay, The Ellipse, Griffithstown, Mon.  
 1956 WATMOUGH, W. E. G., F.Z.S. ; Lintonholme, Thackley, Bradford, Yorks.  
 1953 WATSON, A. ; 24 River Street, Brechin, Angus, Scotland.  
 1950 WATSON, J. K. ; Doonholm, P.O. Box 757, Nairobi, Kenya Colony.  
 1913 WAUD, Capt. L. REGINALD, F.Z.S., M.B.O.U. ; Bradley Court, Chieveley, Nr. Newbury, Berks.  
 1955 WAYRE, P. L. ; Reynolds Farm, Great Witchingham, Norwich.  
 1954 WEALE, L. C. P. ; 13 Overton Road, Southgate, N. 14.  
 1956 WEATHERILL, R. G. ; The Queen's Head Hotel, Charing, Kent.  
 1935 WEBBER, LEONARD C. ; 6 Grand View Parade, Epping, N.S.W., Australia.  
 1956 WEBSTER, J. H. ; Ashgrove, Knockholt Pound, Kent.  
 1950 WEINMAN, Major A. N., O.B.E., C.M.Z.S. ; The Zoological Gardens of Ceylon, Allan Avenue, Dehiwela, Colombo, Ceylon.  
 1942 WENKE, FRANCIS L. ; P.O. Box 581, Ferndale, Washington, U.S.A.  
 1947 WEST, DAVID ; 209 N. 18th Street, Montebello, California, U.S.A.  
 1956 WESTON, C. D. ; Bradgate House, Groby, Leicestershire.  
 1956 WESTON, J. T. Y. ; 4 Lynmouth Road, Leicester.



- 1932 WHARTON-TIGAR, Mrs. N., F.Z.S. ; Abbey Gate, Parry's Lane, Stoke Bishop, Bristol 9.
- 1950 WHEATLEY, Mrs. GRACE, R.W.S., F.Z.S. ; Heathfield House, Windmill Road, Wimbledon Parkside, S.W. 19.
- 1956 WHEELER, ERIC R. ; St. Sebastien, Iberville County, Quebec, Canada.
- 1947 WHEELER, T. E., F.Z.S. ; Lynwood, Onslow Avenue, Cheam, Surrey.
- 1947 WHEELER, Mrs. T. E., F.Z.S. ; Lynwood, Onslow Avenue, Cheam, Surrey.
- 1956 WHITE, F. ; 52 Berry Brow, Clayton Bridge, Manchester 10.
- 1956 WHITE, J. C. ; 406 Lindberg Drive, El Paso, Texas, U.S.A.,
- 1955 \*WHITE, Dr. LAWRENCE F. ; 1345 North Vermont Avenue, Los Angeles 27, Calif., U.S.A.
- 1953 WHITEHOUSE, N. V. ; 185 George Street, Brisbane, Australia.
- 1953 WHITFORD, T. B., F.Z.S. ; Bridge Road, Chessington, Surrey.
- 1935 WHITMORE, G. E. ; 40 Charlemont Avenue, West Bromwich, Birmingham.
- 1956 WICKLINE, LYLE ; 6603 King Avenue, Bell, California, U.S.A.
- 1953 WICKS, Mrs. E. ; Silver Springs, Beaufort Road, St. Leonards-on-Sea, Sussex.
- 1924 WILDEBOER, Dr. H. ; "Tuanna," 244 Saltshouse Road, Sutton, Nr. Hull, Yorks.
- 1950 WILKINS, E. E. ; 52 Shenstone Road, Hollywood, Nr. Birmingham.
- 1955 WILKINSON, N. ; "Four Ways," Biddulph Park, Biddulph, Stoke-on-Trent.
- 1948 WILLIAMS, H. P. ; 2 Burcote Road, Pype Hayes, Birmingham 24.
- 1956 WILLIAMS, J. P. ; The Old Farm, Tunstead, Norwich, Norfolk.
- 1905 \*\*WILLIAMS, SIDNEY, F.Z.S. ; Sea Crest, Nyewood Lane South, Bognor Regis, Sussex.
- 1950 WILLIAMS, T. J. ; Cartref, Sylva Gardens North, Craig-y-Don, Llandudno, N. Wales.
- 1945 WILLIAMSON, T. F. M. ; Robin Hill, Benvenuto Avenue, Brentwood Bay, B.C., Canada.
- 1951 WILLMOTT, J. D. ; Box 488, Mount Dora, Florida, U.S.A.
- 1948 WILLISHER, Mrs. G. A. ; 37 Springfield Road, Thornton Heath, Surrey.
- 1950 WILMOT, H., F.Z.S., M.R.I. ; Somerset House Hotel, 6 Dorset Square, London, N.W. 1.
- 1927 WILSON, ANDREW, F.Z.S. ; 233 Argyle Street, Glasgow, C. 2.
- 1948 \*WILSON, CALVIN D., M.A. ; Tracy Aviary, Liberty Park, 589 East 13th South, Salt Lake City 4, Utah, U.S.A.
- 1950 WILSON, G. ; Taormina, 25 Bushmead Road, Eaton Socon, St. Neots, Hunts.
- 1956 WILSON, J. B. ; Gartary Farm, Clackmannan, Scotland.
- 1956 WINCH, S. B. ; Swanington Manor, Norwich.
- 1953 WINDECKER, Dr. W. ; Zoologischer Garten, Riehler Strasse 173, Köln-Riehl, Germany.
- 1954 WINGATE, W. A. ; De Lunn Buildings, Jewry Street, Winchester, Hants.
- 1922 WINTER, DWIGHT ; 1160 Beechwood Blvd., Pittsburgh 6, Pa., U.S.A.
- 1937 WITTING, R. C., F.R.G.S., F.Z.S., M.B.O.U. ; The Gables, West Horsley, Surrey.
- 1951 WITTING, Mrs. R. C. ; The Gables, West Horsley, Surrey.
- 1956 WOLF, Mrs. P. K. ; Hanstead House, Bricket Wood, Nr. St. Albans, Herts.
- 1953 WOOD, G. ; 8 Forge Meads, Wittersham, Nr. Tenterden, Kent.
- 1951 WOOD, Miss G. J. ; Church Cottage, Tarvin, Nr. Chester.
- 1945 WOOD, H. WALLACE ; Oak Hall, Hythe, Kent.
- 1940 WOOD, W. J. ; 61 Milson Road, Cremorne, Sydney, N.S.W., Australia.
- 1956 WOODHOUSE, S. ; 184 Jameson Avenue, Salisbury, Southern Rhodesia.

- 1955 WORKMAN, F. ; 28 Park Road, Enfield, Middx.  
 1903\*\*WORKMAN, WILLIAM H., F.Z.S., M.B.O.U. ; Lismore, Windsor Avenue, Belfast.  
 1950 WRIGHT, S. A., F.Z.S. ; 59 Ashridge Gardens, Palmers Green, N. 13.  
 1956 WYATT, D. P. ; 23A Marsden Road, Welwyn Garden City, Herts.  
 1934 YEALLAND, JOHN J., F.Z.S., M.B.O.U. ; The Zoological Society of London, Regent's Park, N.W. 1.  
 1956 YOUNG, D., M.R.C.V.S. ; Beech Cottage, East Shaw Lane, Midhurst Sussex.  
 1932 YOUNGER, Mrs. L. ; 244 Cranmer Court, Sloane Avenue, London, S.W. 3.  
 1953 ZABALDANO, J. B. ; 15702 E. Nelson Avenue, Puente, Calif., U.S.A.
- 

## THE AVICULTURAL SOCIETY OF SOUTH AUSTRALIA (ADELAIDE)

### LIST OF AFFILIATED MEMBERS

- BARLOW, R. R. ; 62 Wattle Avenue, Brighton, South Australia.  
 BREakey, A. ; 4 King George Avenue, Brighton, South Australia.  
 BURFIELD, C. C. ; 12 Forest Avenue, Black Forest, Adelaide, South Australia.  
 CLYMA, M. ; 28 Avenue Road, Frewville, South Australia.  
 DUNSTONE, Dr. L. J. ; 30 Malvern Avenue, Malvern, South Australia.  
 FECHNER, C. H. ; 29 Woodville Road, Woodville, South Australia.  
 HOGG, G. ; 49 Wallis Street, Parkside, Adelaide, South Australia.  
 HUTCHINSON, H. J. ; Coulls Road, Athelstone, South Australia.  
 LONG, D. E. ; 20 Kyle Street, Glenside, South Australia.  
 MANFIELD, H. ; c/o Zoological Gardens, Adelaide, South Australia.  
 McKECHNIE, R. ; 6 Eric Street, Plympton, South Australia.  
 PHILLIPS, A. ; Burns Avenue, Hazelwood Park, South Australia.  
 SEPPELT, OSCAR ; 57 Northumberland Street, Tusmore, Adelaide, South Australia.  
 SEWELL, H. S. ; 14 Stannington Avenue, Toorak East, Adelaide, South Australia.  
 WRIGHT, R. ; Langdon Avenue, Clarence Park, South Australia.
- 

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 CARNEGIE DUNFERMLINE TRUST ; Abbey Park House, Dunfermline.  
 CHICAGO NATURAL HISTORY MUSEUM ; Roosevelt Road and Lake Shore Drive, Chicago 5, Illinois, U.S.A.  
 DETROIT ZOOLOGICAL PARK COMMISSION ; Ten Mile and Woodward Avenue, Royal Oak, Michigan, U.S.A.  
 DIRECTOR OF PARKS ; City of Portsmouth, Parks Department, Alexandra Park, Portsmouth.  
 HARVARD UNIVERSITY ; Museum of Comparative Zoology Library, Oxford Street, Cambridge 38, Mass., U.S.A.  
 LOUISE AYER HATHEWAY SCHOOL OF CONSERVATION EDUCATION ; Drumlin Farm, South Lincoln, Mass., U.S.A.  
 MCGILL UNIVERSITY ; Redpath Library, McGill University, 3459 McTavish Street, Montreal, P.Q., Canada.

- METROPOLITAN BOROUGH OF SHOREDITCH ; Shoreditch Public Libraries, Hoxton (Central) Library, Pitfield Street, London, N. 1.
- NEW YORK ZOOLOGICAL SOCIETY ; 185th Street and Southern Boulevard, New York 60, N.Y., U.S.A.
- OHIO STATE UNIVERSITY ; Department of Zoology and Entomology, Botany and Zoology Building, Columbus 10, Ohio, U.S.A.
- QUEBEC ZOOLOGICAL GARDENS ; Charlesbourg, P.Q., Canada.
- ROYAL ZOOLOGICAL SOCIETY *Natura Artis Magistra.* ; Plantage Kerklaan 40, Amsterdam-C., Holland.
- ROYAL ZOOLOGICAL SOCIETY OF SCOTLAND, Murrayfield, Edinburgh 12.
- ROYAL ZOOLOGICAL SOCIETY OF SOUTH AUSTRALIA ; Zoological Gardens, Adelaide, S. Australia.
- SEATTLE PUBLIC LIBRARY, Seattle 4, Washington, U.S.A.
- SHEFFIELD CITY LIBRARIES ; Central Library, Surrey Street, Sheffield.
- SOCIÉTÉ ROYALE DE ZOOLOGIE D'ANVERS ; 26 Place Reine Astrid, Antwerp, Belgium.
- SOUTHPORT CORPORATION ; Curator of Hesketh Park, Southport.
- TARONGA ZOOLOGICAL PARK TRUST ; Box 20, P.O. Mosman, Sydney, N.S.W., Australia.
- TORONTO UNIVERSITY ; ROYAL ONTARIO MUSEUM OF ZOOLOGY, 100 Queen's Park, Toronto 5, Ontario, Canada.
- ZOOLOGICAL BOARD OF VICTORIA ; Zoological Gardens, Parkville, N. 2., Victoria, Australia.
- ZOOLOGICKÁ ZAHRAĐA ; Praha, Czechoslovakia.
- ZOOLOGICAL SOCIETY OF SAN DIEGO ; Box 551, San Diego 12, Calif., U.S.A.

## Rules of the Avicultural Society

*Last amended, 9th November, 1955.*

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1.—The name of the Society shall be THE AVICULTURAL SOCIETY, and its object shall be the study of British and foreign birds in freedom and in captivity. Poultry, Pigeons, and Canaries shall be outside the scope of the Society. The year of the Society, with that of each volume of the Society's Magazine, which shall be known as the AVICULTURAL MAGAZINE, shall commence with the month of January and end on the 31st December following.

2.—The Avicultural Society shall consist of Ordinary, Life, Honorary Life Members, and Honorary Fellows, and the last shall be restricted in number to ten, and be elected by the Council.

3.—The Officers of the Society shall be elected, annually if necessary, by Members of the Council in the manner hereinafter provided, and shall consist of a President, one or more Vice-Presidents, a Secretary-Treasurer, an Assistant Secretary, an Editor, and a Council of fifteen Members. The President, Vice-Presidents, Secretary-Treasurer, Assistant Secretary, and Editor shall be *ex officio* Members of the Council.

4.—New Members shall be proposed in writing, and the name and address of every person thus proposed, with the name of the Member proposing him shall be published in the next issue of the Magazine. Unless the candidate shall within two weeks after the publication of his name in the Magazine, be objected to by at least two Members, he shall be deemed to be duly elected. If five Members shall lodge with the Secretary objections to any candidate he shall not be elected, but the signatures to the signed objections must be verified by the Scrutineer. If two or more Members shall object to any candidate the name of such candidate shall be brought before the Council at their next meeting, and the Council shall have power to elect or to disqualify him from election.

5.—Each Member shall pay an annual subscription of £1, to be due and payable in advance on the 1st of January in each year; and, on payment of the subscription shall be entitled to receive all the numbers of the Society's Magazine for the current year. Life Member's fee, £15.

6.—Members intending to resign their membership at the end of the current year of the Society are expected to give notice to the Secretary before the 1st of December, so that their names may not be included in the "List of Members", which shall be published annually in the January number of the Magazine.

7.—The Magazine of the Society shall be issued on or about the first day of every month, and forwarded, post free, *to all the Members who shall have paid their subscriptions for the year ; but no Magazine shall be sent or delivered to any Member until the annual subscription shall have reached the hands of the Secretary-Treasurer.* Members whose subscriptions shall not have been paid as above by the first day in November in any year shall cease to be Members of the Society, but may be readmitted, at the discretion of the Council, on payment of the annual subscription.

8.—The President, Secretary-Treasurer, Assistant Secretary, and Editor shall be elected for a term of five years, and, should a vacancy occur, it may be temporarily filled by the Executive Committee (see Rule 10). At the expiration of the term of five years in every case it shall be competent for the Council to nominate the same officer, or another Member, for a further term of five years, unless a second candidate be proposed by not less than twenty-five Members of at least two years' standing, as set forth below.

In the November number of the Magazine preceding the retirement from office of the President, Secretary-Treasurer, Assistant Secretary, and Editor, the Council shall publish the names of those members whom they have nominated to fill the vacancies thus created ; and these Members shall be deemed duly elected unless another candidate or candidates be proposed by not less than fifteen Members of at least two years' standing. Such proposal, duly seconded and containing the written consent of the nominee to serve, if elected, in the capacity for which he is proposed, must reach the Secretary on or before the 15th of November.

9.—The Members of the Council shall retire by rotation, three at the end of each year of the Society (unless a vacancy or vacancies shall occur otherwise) and three other Members of the Society shall be recommended by the Council to take the place of those retiring. The names of the three Members recommended shall be printed in the November number of the AVICULTURAL MAGAZINE. Should the Council's selection be objected to by fifteen or more Members, these shall have power to put forward three other candidates, whose names, together with the signatures of not less than fifteen Members proposing them, must reach the Secretary *by the 15th of November.* The names of the six candidates will then be printed on a voting paper and sent to each Member with the December number of the Magazine, and the result of the voting published in the January issue. Should no alternative candidates be put forward, in the manner and by the date above specified, the three candidates recommended by the Council shall be deemed to have been duly elected. In the event of an equality of votes the President shall have a casting vote.

If any Member of the Council does not attend a meeting for two years in succession the Council shall have power to elect another Member in his place.

10.—Immediately after the election of the Council that body shall proceed to elect three from its Members. These three, together with the Secretary-Treasurer, Assistant Secretary, and Editor, shall form a Committee known as the Executive Committee.

The duties of the Executive Committee shall be as follows :—

(i) In the event of the resignation of any of the Officers during the Society's year, to fill temporarily the vacancy until the end of the year. In the case of the office being one which is held for more than one year (e.g. Secretary-Treasurer, Assistant Secretary, or Editor) the appointment shall be confirmed by the Council at its next meeting.

(ii) To act for the Council in the decision of any other matter that may arise in connection with the business of the Society.

The decision of any matter by the Executive to be settled by a simple majority (three to form a quorum). In the event of a tie on any question, such question shall be forthwith submitted by letter to the Council for their decision.

The Executive shall not have power

- (i) To add to or alter the Rules ;
- (ii) To expel any Member ;
- (iii) To re-elect the Secretary-Treasurer, Assistant Secretary, or Editor for a second term of office.

It shall not be lawful for the Treasurer to pay any account exceeding £10 unless such account be duly sanctioned by another Member of the Executive.

It shall be lawful for the Secretary-Treasurer or Editor to pledge the Society's credit for a sum not exceeding £100.

Should a Member wish any matter to be brought before the Council direct such matter should be sent to the Secretary with a letter stating that it is to be brought before the Council at their next meeting, otherwise communications will in the first place be brought before the Executive.

A decision of a majority of the Council, or a majority of the Executive endorsed by the Council, shall be final and conclusive in all matters.

11.—The Editor shall have an absolute discretion as to what matter shall be published in the Magazine (subject to the control of the Executive Committee). The Secretary and Editor shall respectively refer all matters of doubt and difficulty to the Executive Committee.

12.—The Council (but not a committee of the Council) shall have power to alter and add to the Rules, from time to time, in any manner they may think fit. Five to form a quorum at any meeting of the Council.

13.—The Council shall have power to expel any Member from the Society at any time without assigning any reason.

## The Society's Medal

(Instituted 1st November, 1896)

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### RULES

The Medal may be awarded at the discretion of the Council to any Member who shall succeed in breeding, in the United Kingdom, any species of bird which shall not, in the opinion of the Council, be known to have been previously bred in captivity in Great Britain or Northern Ireland. Any Member wishing to obtain the Medal must send a detailed account for publication in the Magazine within about eight weeks from the date of hatching of the young, and furnish such evidence of the facts as the Council may require. The Medal will be awarded only in cases where the young shall live to be old enough to feed themselves, and to be wholly independent of their parents. The question of awarding a Medal for the breeding of local races or sub-species of species that have already been bred shall be at the discretion of the Council. No Medal can be given for the breeding of hybrids.

The account of the breeding must be reasonably full so as to afford instruction to our Members, and must appear in the AVICULTURAL MAGAZINE before it is published or notified elsewhere. It should describe the plumage of the young, and *be of value as a permanent record of the nesting and general habits of the species*. These points will have great weight when the question of awarding the Medal is under consideration.

In every case the decision of the Council shall be final.

The Medal will be forwarded to each Member as soon after it shall have been awarded as possible.

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The Medal is struck in bronze (but the Council reserve the right to issue it in *silver* in very special cases) and measures  $2\frac{1}{2}$  inches in diameter. It bears on the obverse a representation of two birds with a nest containing eggs, and the words "The Avicultural Society—founded 1894". On the reverse is the following inscription: "Awarded to [name of recipient] for rearing the young of [name of species], a species not previously bred in captivity in the United Kingdom."





# AVICULTURAL MAGAZINE



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# THE AVICULTURAL SOCIETY

Founded 1894

**President : D. Seth-Smith, Esq.**

**Hon. Secretary and Treasurer : A. A. Prestwich,** 61 Chase Road,  
Oakwood, London, N. 14.

**Assistant Secretary : Miss Kay Bonner.**

Membership Subscription is £1 per annum, due on 1st January each year, and payable in advance. Life Membership £15. Subscriptions, Changes of Address, Names of Candidates for Membership, etc., should be sent to the Hon. Secretary.

## THE AVICULTURAL SOCIETY OF AMERICA

**Hon. President : Mr. Jean Delacour.**

**President : Mr. Don Rowland.**

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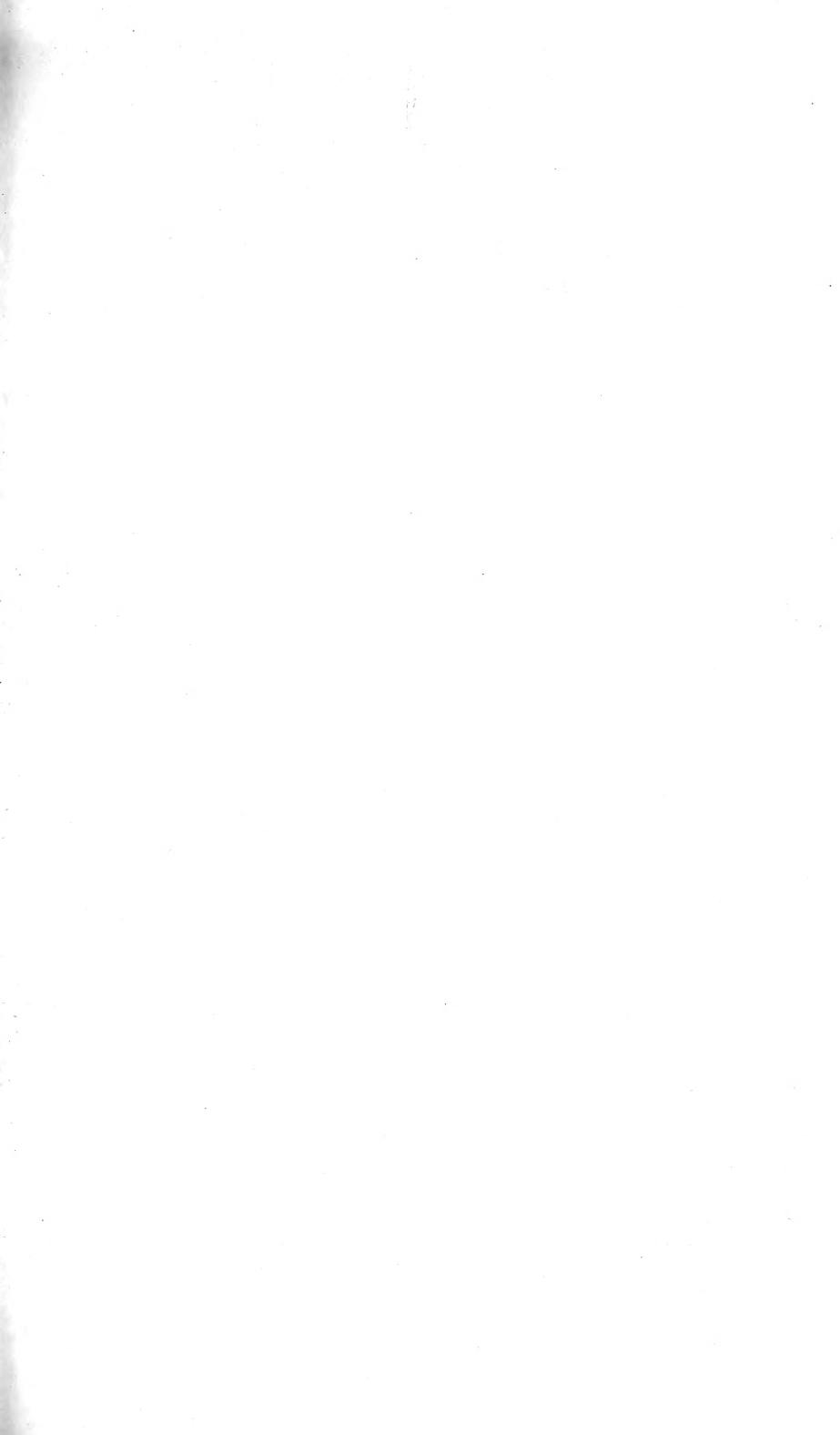
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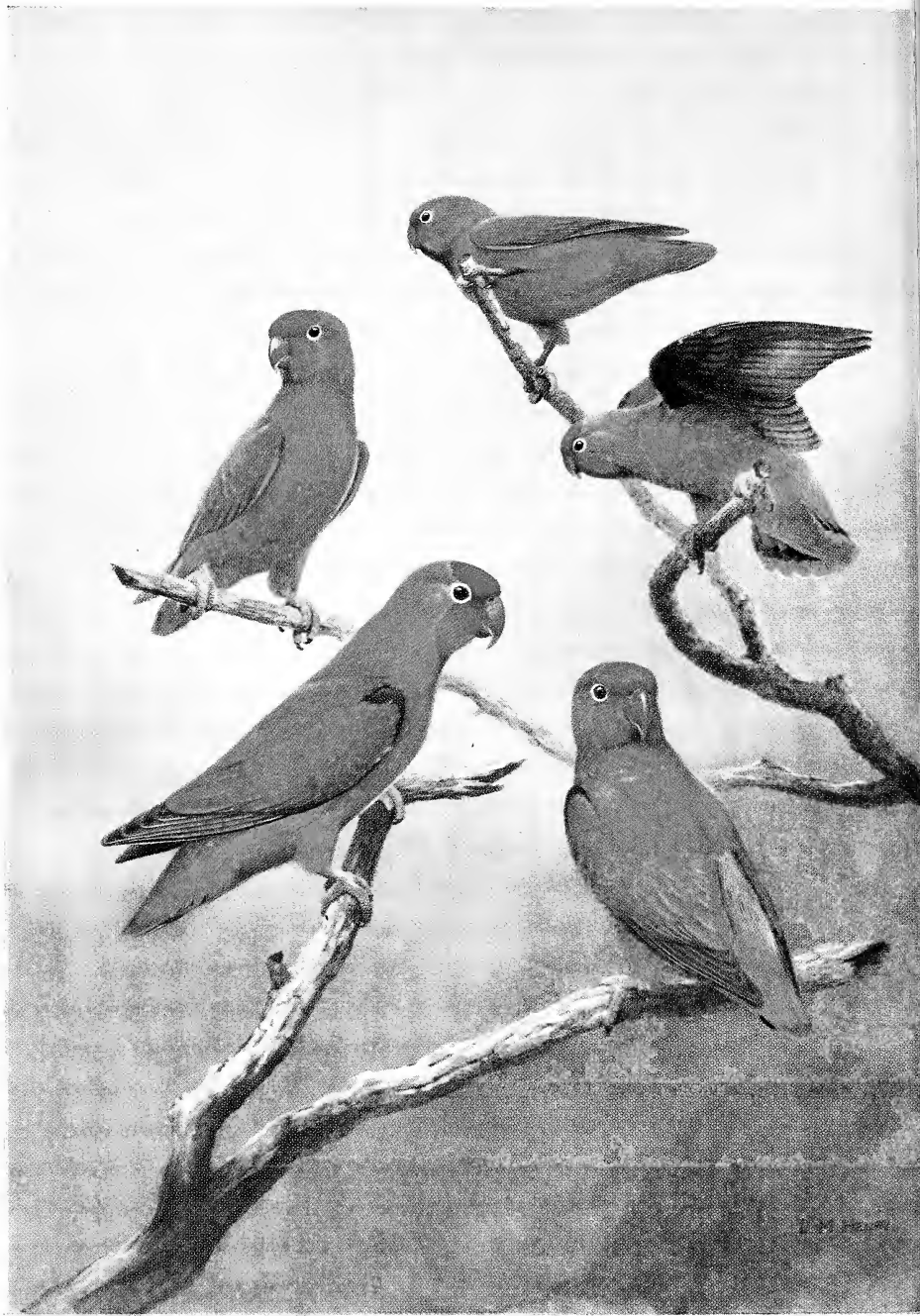
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RED-FACED LOVEBIRDS

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY  
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## BREEDING THE RED-FACED LOVEBIRD

*Agapornis pullaria*

By A. A. PRESTWICH (Southgate, England)

“The trading vessels continually bring away considerable numbers in cages : but they are so tender that most of them die in their passage to our colder climates. It has also been remarked that many of them have dropped down dead through timidity at the firing of a vessel’s great guns.”

So wrote the Rev. Thomas Smith in 1806.

It has certainly been our experience that when newly imported the Red-faced is incomparably the least hardy and most timid of all the lovebirds known to Aviculture. Newly imported birds are very subject to cerebral hæmorrhage, brought on by fright. In spite of exercising every possible care we have, at various time, lost dozens. The sudden opening of a door or window, the entry of a visitor to the bird-room, even a quick movement has proved quite sufficient to cause a fatality. We have often marvelled that any manage to reach these shores alive.

The Red-faced, alone amongst the lovebirds, is invariably imported with the flight-feathers of one wing cut : this is often done with such carelessness that the wing itself is mutilated. It used to be recommended that the stumps of the quills should be removed—one or two at a time, repeating the operation about once a week until all are removed. We would hesitate to follow such a recommendation. The shock of handling alone would more than likely prove fatal to a bird already very considerably debilitated by the rigours of trapping and importation, coupled with injudicious treatment generally. In the past we have had hundreds of Red-faced, all too many have been short-lived, but survivors have invariably been allowed to moult the stubs naturally. In addition, no attempt has ever been made to induce a false moult.

Many aviculturists have had good pairs of adult birds in hard condition. Why then do they not breed with them? The main trouble appears to be that the ordinary aviculturist has a somewhat defeatist attitude towards this species. He knows that the majority of the imported lovebirds are comparatively free-breeders and that the Red-faced has a very bad reputation in this respect, having rarely got much beyond the laying of eggs. He argues there must be some very good reason : and instead of trying, let alone persevering, he tries his luck with birds that are, by general consent, more likely to prove breeders. He cannot be blamed, for, after all, most aviculturists are limited as regards aviary space, and we all do like to breed birds !

I have been keeping this little parakeet almost continuously for nearly thirty-five years. During the past four years especially, the effort to breed it has been both extensive and sustained, and it is the events of this period that I propose to detail. Let me here say that the many years, with their seemingly endless disappointments, have at long-last proved rewarding in that we have now reared a single young one.

In the early part of 1953 we constructed what we hoped would prove an acceptable aviary, providing the very necessary seclusion : being such timid birds it is absolutely essential that they should enjoy a sense of security. It measures 24 ft. by 18 ft. by 7 ft. 6 in. high ; the materials being  $\frac{1}{2}$  in. wire-netting and larch poles. Three sides are totally enclosed and the fourth, the one with the gate, three-quarters enclosed with sheets of asbestos. The roof is covered with asbestos sheets to a width of 4 feet on the north side, and 2 feet on the three others. The enclosure contains a shelter 8 ft. by 3 ft., raised 3 feet from the ground, and seven or eight nut-bushes. At the outset four full-size bales of peat-moss were mounted on staging in the centre of the aviary. But this did not prove a success and, as will be seen later, we had recourse to a method somewhat similar to that originated by Edward Boosey and used by him in his experiments before the war.

The 18th May, 1953, dawned bright and clear, and with the weather forecast " Fine, with long, sunny spells " we judged the time had come to introduce our small flock. Ten specially selected pairs were released and all proved to be strong fliers. They very quickly settled down, but in the afternoon there was torrential rain, during which the entire flock remained out ! Fortunately, and to our great surprise, there were no ill-results. During the next few months there were several deaths, and as bird-room birds moulted and became full-winged they were added to the community to make good the losses. From the first, great interest was shown in the bales of peat-moss and soon several pairs were busily engaged excavating holes. But unfortunately they were not content merely to excavate nesting sites, they bored, and with such good purpose that they ran tunnels right

through the bales—they just didn't know when to stop! No eggs were laid which was, perhaps, just as well.

Came October with slight ground frosts and on the 7th we judged the time had come to bring them in for the winter. The catching up of birds in a largish aviary is at no time easy. I am not particularly good with a net and so, albeit with many qualms, I entrusted the operation to two well-known experts, who must of necessity remain nameless. But put not your trust in experts! These two could not have been more inexperienced and were quite incapable of appreciating the delicacy of their task and, in spite of my explicit instructions and frequent exhortations to exercise the greatest care, caught them up regardless of everything and damn the consequences. The result was very much worse than anything even I had foreseen. Twenty birds were caught up and within a week half of our precious stock had died from concussion, cerebral hæmorrhage, and pneumonia consequent on shock. As can be well-imagined it was a very distressing and discouraging experience.

We still had a number of birds in various stages of moult, and during the next few months we were able by various and devious means to buy in a couple of dozen or so newly imported birds. Then started a further series of losses, all the old causes, but by the end of April, 1954, we had 31 good birds, including 10 from the previous year, ready for turning out. In the meantime the bales of peat-moss had been replaced by eight large grape barrels, approximately 34 inches deep by 14 inches across the mouth, which had been filled with wet peat-moss, rammed hard. Then on 11th May, a glorious day with a temperature of 82° F., we turned out the flock. Within an hour a very fine male managed to hang itself in the fork of a bush, and next morning a male and a female were picked up dead—fractured skulls. Thenceforth nothing untoward happened.

The barrels proved very acceptable and provided both constant amusement and outlets for unlimited energy. Several were more or less seriously "occupied" and at one time we had high hopes, but month followed month and no young ones made their appearance. Towards the end of September there was very considerable activity in the barrels, apparently a sort of autumn cleaning. Fourteen whole eggs and many fragments were thrown out of the nests. None had contained a chick, and we were, in fact, unable to determine whether any had been fertile as all were quite dried up.

As some will remember the summer was not worthy of the name. The weather having been so poor we considered our flock must have been well and truly acclimatized to have withstood it. Had the summer been the type our fathers are said to have enjoyed we would have hesitated even to consider leaving them out, but having been so bad we thought that by contrast the winter couldn't be so very much

worse! This, coupled with the remembrance of the catching-up disaster of the previous autumn, persuaded us to take a chance and leave them out, only catching them up if it appeared that the weather really was going to prove too much for them. We did, however, catch up two females that were poor fliers and left out 26. In the past we have always been concerned when the temperature in the bird-room has dropped below 40° F. But, and we consider this quite remarkable, all 26 came through the very variable and treacherous winter, with the temperature on occasions as low as 21° F. Even on the very coldest days, and with thick snow on the ground, they were all in the rudest health and full of the joy of living. At night some occupied the nesting barrels, but the majority hung suspended head down under the sheltered parts of the roof.

In the early spring, 1955, the old barrels were replaced by others prepared during the winter. This time a smaller barrel was used, approximately 14 inches deep and 12 inches across the mouth. The number was increased to a dozen and they were hung facing north and west.

When we broke up the old nests we found that in general the burrows extended on a slight incline to a depth of perhaps six or seven inches and then opened up on one side into a nesting chamber about the size of a largish orange. In no case did the burrows turn vertically and then double back so that the nesting chamber was more or less above the entrance hole—as has been stated on occasions. No nesting material of any kind had been carried into any nest.

The task of excavating falls mainly to the females. The males show great enthusiasm but are more of a hindrance than any real help. They burrow into the peat with the greatest of ease and since we have used the barrels we are not aware that any has got into difficulties on account of an excavation caving in. When we used the bales of peat we did have one fatality—a female that somehow became wedged about nine inches along an open tunnel.

Early in 1955 a young male managed to crack its skull, and during a warm spell the two poor flying females were restored to the aviary, so that we started the season with a complement of 27.

The summer proved to be the best and certainly the warmest for many years, and as week followed week of almost unbroken sunshine our hopes rose. We felt there was a really good chance of success. That they had wintered out proved they must be in first rate condition; this coupled with the glorious weather led us to believe that they would now breed, if ever. About ten pairs burrowed, several appeared to be serious in their intent. There was much mating, over twenty eggs it later transpired, but no young. There is some variation in the size of the eggs, 20–21 × 16–17 mm.; 20 × 16 mm. being a fair average.



On the 3rd December a "stranger" appeared in the aviary, hanging on the netting, apparently unable to fend for itself. We brought it into the house where it remained caged until the spring, when it was returned to the enclosure. Several authorities examined it and pronounced it to be a young one. We would like to think it was a home-bred bird, but we haven't the faintest clue to its origin, so we have recourse to the Scottish verdict "Not proven". It has developed into quite a nice little female but still retains a somewhat juvenile appearance.

It is very remarkable, but in recent years both summers and winters invariably establish or break records of one kind or another. A record-breaking summer was naturally followed by a record-breaking winter : days and nights of pitiless frost with the temperature on one occasion down to 15° F. The flock was again left out and successfully withstood this, the worst winter of the century. The losses were negligible : one female was found dead egg-bound on 25th November, and one in late December for no ascertainable cause.

We now come to the year 1956. We suffered an invasion of mice during the previous year : only comparatively few got into the lovebird enclosure and, as far as we know, none managed to climb up to the barrels. We eventually entirely cleared the aviaries of these pests and took all reasonable precautions to prevent a repetition of the nuisance. In the spring sheets of galvanized iron were sunk in the ground, leaving 18 inches above ground. The staging was reconstructed and we are now confident it is virtually impossible for any mouse to gain entrance to a barrel. The new lay-out enabled the number of barrels to be increased to sixteen, eight facing north and eight west.

It could hardly be expected that we should enjoy two successive good summers. And so it came as no great surprise that the summer of 1956 proved to be one of the worst for quite a few years : sunless, cheerless, wet, with cold nights. There cannot have been more than nine or ten real summer days during the whole period.

Matters went very much as in previous years, matings, excavatings, and more matings. The weather was really so poor that no breeding results could reasonably be expected.

It is said that one of the main attractions of Aviculture is its very uncertainty. True or false it is definitely very uncertain ! During the many years in which we have engaged in the "Amiable Art" we have experienced many trials and tribulations, mixed, be it said, with just a few joys and triumphs. We now enjoyed one of the rare triumphs, really quite an unexpected one.

5th October, 1956. On this day a single young one emerged from a barrel. It was well-grown and a good flier but very soft in condition and altogether miserable looking. The female parent which had not

been seen for some weeks was in very poor condition and miserable looking, too. Both of them did little except sit close against each other with their beaks tucked into their shoulders. The male was invariably in attendance, sitting on the other side and giving general support to the young one. At frequent intervals the young one bestirred itself and begged for food, with drooping wings slightly open and quivering, at the same time "bleating" incessantly—a like performance never witnessed by us with any other *Agapornis* species. Fortunately the male was always willing to oblige, for the female most certainly didn't appear as though she were capable of feeding herself, let alone assisting with even a single young one. The temperature that night dropped to near frost and we were far from hopeful of the survival of either, especially as they did not retire to the barrel but roosted on the top of it. However, survive they did. The next four or five days they spent huddled together, two very dejected looking little creatures, but as they were able to fly and day followed day we became less pessimistic, more so as the nights had become markedly less cold. Then after about a week there was a decided improvement in their appearance. The male no longer remained in such close attendance, but was always within easy reach and ever on the alert to drive off any other bird that ventured too near his family. For the next month it was quite usual to see all three sleeping close together. They were not actually seen to re-enter the barrel but they may have done so as one of their favourite perches was, and still is, on the peat retaining board fastened to the front.

On leaving the nest the young one was, as already stated, in a very soft condition. In colouring it is a washed-out replica of a female: the green is dull, entirely lacking the beautiful, vivid sheen of an adult; the yellow-orange of the forehead, face, and throat is paler and less extensive; beak a pale brownish-orange; rump bright blue but paler; under wing-coverts green, sparsely feathered; tail as in an adult but shorter and the colouring paler. The general impression is that when it moults it will prove to be a female; this is heightened by the fact that there are no black feathers in the under wing-coverts.

Food. Our Red-faced colony lives almost entirely on soaked millet sprays and soft, sweet apples. White millet, pannicum, and canary seed are always available, but they are rarely, if ever, touched. It should be mentioned, in passing, that to our great cost we have found it most inadvisable to give soaked millet sprays to newly imported birds. They gorge themselves and seem quite unable to assimilate it. The sprays, apples, and cuttle-bone are hung on the netting and the other seeds, water, and grit are supplied on a table. There is therefore no necessity for them to descend to the ground and it is indeed quite exceptional to see any do so. But very occasionally about half a dozen may be surprised fossicking about, usually amongst the peat-moss that

has fallen during the course of excavation. We are quite unable to account for the fact that these little parties always appear to be composed of males only. The ground of the aviary is overgrown with weeds of all kinds and there is also much sprouting seed, but none ever seems of interest : certainly we have never seen a lovebird so much as nibbling chickweed or anything else, so we do not think green food in any form was used in the rearing of our young one.

A few details still need to be filled in. Only one young one left the nest but it is extremely unlikely that the clutch consisted of only one egg. We can only assume that, in conformity with several other nests, the number was between four and six. We may perhaps know more of this when the barrel is replenished with peat-moss. It is the same with the incubation period, we surmise it to have been 20-21 days, but of this we have no confirmation.

During all this time there were Diamond Doves and Chinese Painted Quail in the enclosure, but their breeding operations, and the Quail were remarkably successful, in no way interfered with the lovebirds and the lovebirds in turn appeared to be quite unaware of their presence.

Any member specially interested in this species is very welcome to come, preferably by appointment, and see our "breeding" colony. And, please, no post cards enquiring whether we are certain our Lovebirds are Red-faced and not Peach-faced. We really do know the difference !

The sequel is very unfortunate. The night of 6th November had a slight ground frost accompanied by light fog. The combination was apparently just too much for the young one and in the morning it was breathing heavily. We caught it up as a precautionary measure. Its condition did not at first give rise to any great anxiety, but it deteriorated very rapidly and within a few hours it was dead. It died on the thirty-fourth day after leaving the nest and was quite independent of its parents.

The post-mortem examination carried out at the Zoo showed that the cause of death was pneumonia, and confirmed that, as expected, the young one was a female.

As described above, A. A. Prestwich has bred the Red-faced Lovebird (*Agapornis pullaria*). It is believed that this may be a first success.

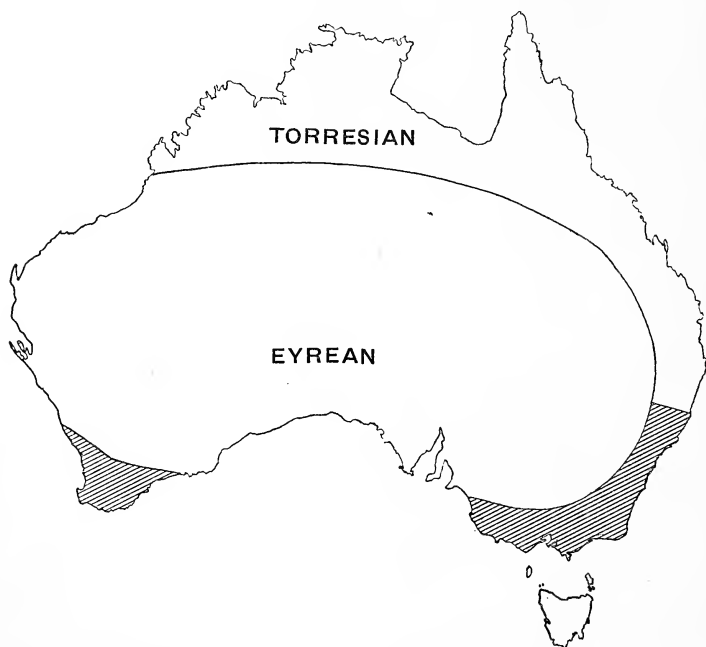
Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

## THE PILEATED PARRAKEET

*(Purpureicephalus spurius)*

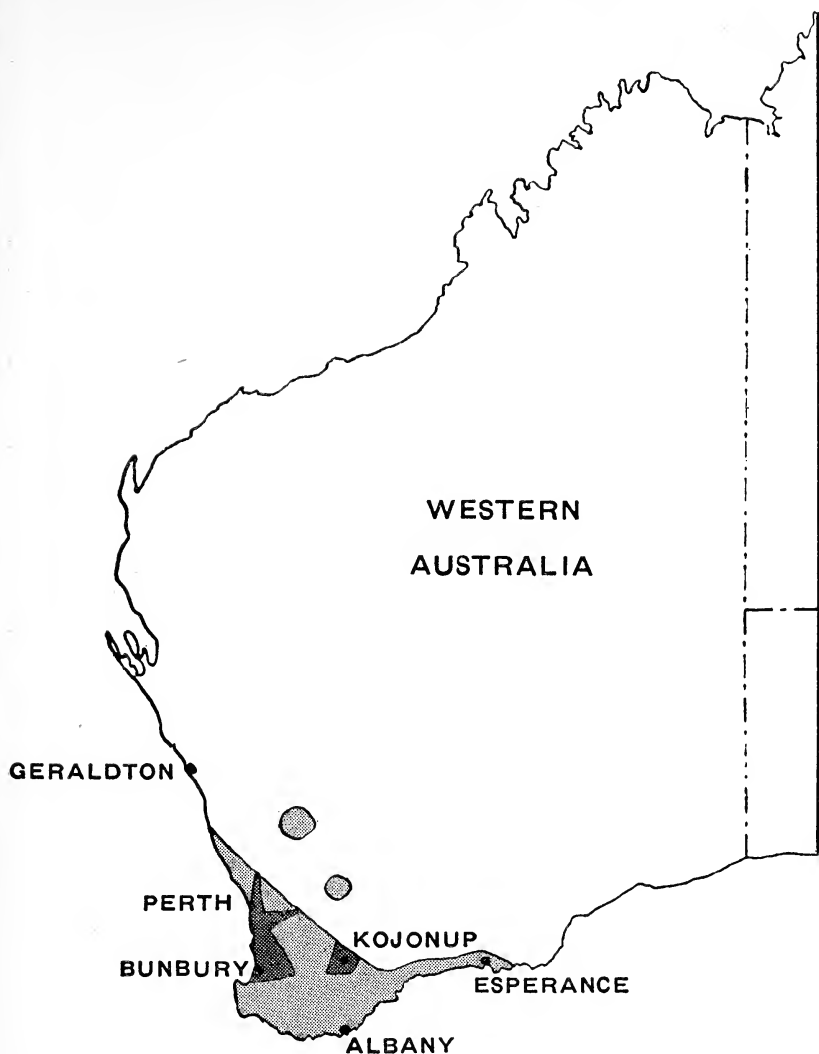
By P. M. A. HARWOOD, M.R.C.V.S. (Darlington, Western Australia)

The Pileated Parrakeet, known in Australia as the Red-capped or West Australian King Parrot, is a most interesting bird. A member of the Bassian fauna of south-west Australia, the bird has no close generic relatives. Generally speaking the Bassian fauna of the south-west is represented by an identical or similar and related fauna in the Bassian region of Eastern Australia, an indication of a previous connection across the existing barren Eyrean region which now acts as an effective barrier against eastwards and westwards migrations (see Map 1).



MAP 1.—Hatched areas show the Bassian Areas of S.W. and S.E. Australia.

The Pileated Parrakeet is a bird with a limited range in the south-western corner of Western Australia. It is limited in distribution to the Jarrah and Karri forest areas, the south-west coastal plain, and has made some limited extensions into the white gum forests and mallee areas and along the south coast (see Map 2.)



MAP 2.—Range of Pileated Parrakeet. Heavily hatched areas are those of greatest population density.

Genealogically, the bird is supposed by Serventy and Whittell (1) to be a surviving prototype of the Broadtail Parrakeets (*Platycercines*), which are represented in Western Australia by the Yellow-naped or Twenty-eight Parrakeet (*Barnardius semitorquatus*), the Port Lincoln or Bauer's Parrakeet (*B. zonarius*), and the Stanley Rosella (*Platycercus ictorotis*); this prototype now having become extinct in the eastern region.

The author feels that this is not the true relationship. It is true that the bird shows several of the general characteristics of the Platycercine Parrakeets, but these characteristics are also seen in the small Broadtails (genus *Psephotus* and related genera which include Red-rumped, Many-coloured, and Blue-bonnet Parrakeets).

More weight can, I feel, be given to the argument that the Pileated is a bird which has followed a lone evolutionary development. That this development has occurred from Broadtail stock is suggested on morphological grounds, on the characteristic exhibition of a row of white dots on the under surface of the flight feathers in immature plumage, and on the striking resemblance of the calls of young Pileateds to the very similar normal calls of the Platycercines generally.

As evidence against the bird being a progenitor of Broadtail stock, two characteristics of the group as a whole are quite different in the Pileated. The sexual display is quite unlike that of any other Broadtail and the calls of the mature birds are also strikingly dissimilar.

The beak shows a remarkable evolutionary development. The peculiar elongation of the upper mandible is seen in only three other Australia psittacines—the Slender-billed Corella, the race *tenuirostris* of Baudin's Black Cockatoo (both these forms occur in south-west Australia), and the rare Blue-cheeked Parrakeet of North Queensland (Hallstrom (3)).

That the bird itself is in a process of evolutionary change is suggested by the fact that, whereas some females exhibit a similar, though duller, plumage to adult males, others never progress beyond the dull juvenile plumage of the immature. This phenomenon may even be seen in females from the same nest.

This description of the bird, given by the Duke of Bedford (3), is so comprehensive that I can add little to it.

“Adult male. Cap dark crimson ; cheeks bright greenish-yellow ; mantle and wings green ; under wing-coverts, outer edge of wing, and portion of flight feathers blue. Rump yellow with a greenish tinge. Central tail feathers green, darkening towards the tip. Outer tail feathers blue and white. Breast purple. Vent and under tail-coverts red. Bill bluish horn and peculiarly long and narrow. Total length 14½ inches. Size about that of a pigeon.

“Adult female. Very variable. Some hens, except for a few green feathers on the cap and a duller shade on the cheeks, have the same plumage as the male. Others, even sisters in the same nest as the bright form, never acquire a plumage very different from the immature, save that they are a little more purple on the breast.

“Immature. Head and upper parts a dull, dark green, slightly paler on the cheeks ; bastard-wing, primary coverts, and outer edge of flight feathers blue ; rump greenish-yellow. Middle tail feathers bronze-green. A narrow bar of red across the forehead. Throat and foreneck

dusky grey with a slight reddish tinge on the breast. Abdomen pale, purplish-blue. Lower flanks and thighs apple green, the feathers margined with red. Under tail-coverts similar but paler and inclining to yellow. Adult plumage is acquired with the first complete moult when the bird is a little less than a year old."

Females can always be picked from males in full colour as in the former the cap is always more maroon than crimson.

The species is subject to a certain amount of erythrism and some birds show a red edging to the yellow feathers of the rump. There is also a considerable variation in the amount of blue in the wings and in the depth of purple in the breast of males. It is a remarkable thing that such garish colours combine into a very effective camouflage. Birds seen at a distance appear a uniform, inconspicuous greyish-green and it is not easy to differentiate between immature and coloured birds in the field.

The one conspicuous feature of the Pileated in flight is the yellow rump and this feature is the one by which the bird can be quickly differentiated in the bush. The flight of the Pileated is quite characteristic and is composed of a series of undulatory glides interspersed by ten to twelve rapid wing beats. It is a swift and agile bird.

The range of the Pileated has already been described. Within this range, the bird has adapted itself well to changes in environment caused by the advance of agriculture and, in spite of persecution by man, is in no immediate danger of extinction.

In some areas the birds are "declared" as vermin on account of the damage they inflict to orchards, and nowhere are they protected by law. Even in King's Park, in the heart of Perth, it is not unusual to see a few Pileated Parrakeets, and there can be few suburban gardeners who have not had their almond trees raided at some time. However, on account of the very effective camouflage, few people recognize the birds and most of these depredations are blamed on the "Twenty-eights".

The Pileated is a tree lover and keeps to the forests and belts of trees. The "parkland" type of clearing with the retention of trees for shade and shelter have suited the birds, while they have been quick to turn to their advantage the introduction of many new and edible flora species.

The natural foods comprise the seeds of various eucalypts, chiefly red gum, white gum, and jarrah; the seeds of sheokes (*Casuarina* spp.), banksias, native pears, and various other native trees and shrubs and grass seeds. Like most parrakeets, the nectar of flowering eucalypts is also relished.

Introduced foods for which the birds show a liking are oats and wheat, apples, pears and stone fruits, almonds, pine cones, and the seeds of many of the introduced pasture plants.

The breeding season is approximately between October and December, but birds on the coastal plain usually nest about a month in advance of those on the Darling Range escarpment. The nest site is a hollow in a tree seldom less than 40 feet from the ground. Red gums, jarrahs, and white gums are selected as nest trees and the birds show a preference for hollows which face east to north.

Green trees are almost invariably selected, but the type of nest site shows considerable variation. There is usually a preference for sites with a small entry hole and this often shows signs of chewing. Some nests are at the level of the entry hole, others descend a considerable amount. One nest was found where the eggs were laid 15 feet below the entry hole.

From five to seven eggs form the normal clutch and incubation takes approximately twenty-four days. The female alone incubates, being fed by the male. He usually flies to a near-by tree and calls the female off the nest to be fed. She returns immediately to the nest. Feeding times are usually 8 a.m. and 4.30 p.m. For about two weeks before the young birds are ready to fly they can be heard calling for food at these times. The call is a prolonged double whistle, the second note being about three tones higher pitched than the first.

All the young birds normally leave the nest on the same day and are fed by their parents for about another fortnight. During this period they utter the double-whistle call almost incessantly and will fly to any adult, even a stranger, demanding to be fed. Nesting territories are rigidly guarded and both members of a pair act in unison to repel an invader. Mated pairs fly together, but young birds congregate into loosely integrated flocks when independent of their parents. These flocks lack the close integration and discipline of the flocks formed by young Rock Pebbles.

Towards the end of winter, birds congregate into large flocks of all ages and both sexes, often around farms and other places where there is a ready food supply. These flocks suddenly disperse with the advent of spring when the birds again fly in individual pairs and start to dispute over nesting sites.

Depending on seasonal conditions, these large winter flocks may last for months or only a few weeks.

There are three basic call notes of the Pileated Parrakeet. The first and most often heard call is a harsh grating cry frequently reiterated and of short duration and usually uttered in flight. The alarm call is a variation of this. The second call could be likened to "Kilililik". This call is usually uttered when the bird is perching.

There is also the double-whistle call of the young bird, also uttered by females wishing to be fed by their mates.

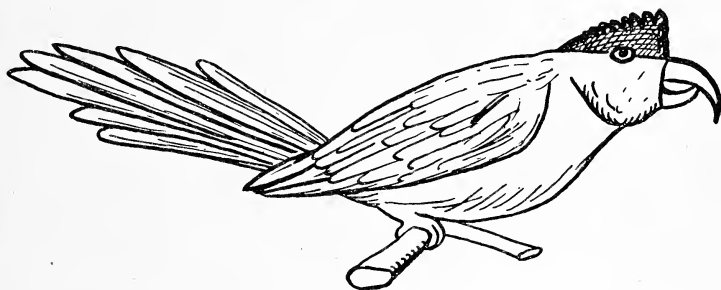
In addition, males when displaying often make a clicking noise,



apparently with the beak, and when a number of newly-trapped birds are confined in an aviary they dispute roosting sites with a peculiar squealing call which is often continued long after dusk.

### MATING BEHAVIOUR

Males exhibit a display quite unlike that of the Platycercine Parrakeets. The feathers on the cap are erected and the tail is shaken vertically, never horizontally. Hens out of the breeding season are far more dominating than is usual with Broadtails. Both members of the pair prospect for nesting-sites with much excitement, calling, and tail-shaking, but under normal conditions the male never actually enters the nest.



Attitude of Pileated male when displaying.

Males are assiduous in feeding females during courtship, with the normal head-bobbing movements and regurgitation. Copulation takes place on a fairly wide branch or limb with the female remaining crouched through the pre-copulatory ceremony. Females will solicit copulation by adopting this crouched posture and slightly vibrating the wings.

### METHODS OF TRAPPING

The Pileated is a very intelligent and active bird and is far harder to trap than most parrakeets. Basically there are three periods when trapping is possible :—

- (1) When young birds are not fully independent of their parents they are much attracted by the calls of any mature birds.
- (2) When the nesting-site selection is taking place, any strange Pileated will be attacked by a pair which have selected their nesting territory.
- (3) During the period when winter flocks are formed food supplies are usually short and the birds can be trapped on grain.

Like many parrakeets, Pileateds show a reluctance to leave an injured companion ; in fact, the cries of an injured bird will attract others.

## THE PILEATED PARRAKEET AS AN AVIARY BIRD

By virtue of its brilliant and unusual coloration and active disposition, the Pileated makes an attractive aviary bird. On the negative side of the balance it must be stated that it is very wild and seldom becomes even reasonably steady. Hand-reared birds are very friendly and docile and make fairly talented talkers. Its wildness is compensated somewhat by its agility and the birds rarely injure themselves in aviaries once they have come to accept wire-netting as an impassable barrier. For this reason, it is essential to cage newly-trapped birds in small, roofed cages until they get used to netting, otherwise head injuries are common and severe. It needs a fairly large aviary to be seen to advantage.

The basic food is three parts sunflower, two parts oats, and one part canary seed. Most pairs will consume a whole apple daily and require a good deal of greenstuff.

The species nests quite readily in an aviary, being single-brooded. When young are being reared an abundance of fruit, soft grass, green peas, lettuce, soaked bread, and boiled maize are essential. Like most Australian parrakeets, it is quite impossible to expect good results where the young are to be reared on hard seed. Interference and inspection of the nest is resented and hens even desert young if interfered with. Males are quite tolerant of the presence of their young, but breeding pairs can be very aggressive towards other birds.

Several hybrids have been produced. On record are hybrids with the Mealy, Common, and Stanley Rosellas.

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- (2) *Parrots and Parrot-like Birds*, by THE DUKE OF BEDFORD. All Pets Books, Inc., Fond du Lac, Wisconsin, 1954.
- (3) SIR EDWARD HALLSTROM (pers. comm.).

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THE NESTING OF THE PILEATED  
PARRAKEET IN CALIFORNIA

(*Purpureicephalus spurius*)

By DAVID M. WEST (Montebello, California, U.S.A.)

The Pileated Parrakeet, sometimes more happily termed the Red-capped Parrakeet, has been bred on many occasions here in California. These striking birds, with their very unusual coloration, are not favourites with some aviculturists. Their nervous disposition, and long curved beak, accompanied by a rather bizarre colour scheme have made them loved by some, disliked by some, and ignored by many.

The pair which nested for me in 1955 and again in 1956 were bred in 1952. The male was in complete colour in 1954, but at that time the female did not have her red cap, though otherwise completely coloured. It would appear from this that the male colours completely in two years, but that the female requires three years to assume complete adult plumage. I have not seen a previous reference to this fact, and possibly my experience is only an isolated case.

Because of their rather nervous disposition this pair were kept in a 26 ft. long aviary, which was about 3 feet wide and 8 feet high. The feeding and watering was done at the front and this allowed them to fly into the shelter while these operations were being carried out. This arrangement was a good one since the pair were able to observe the feeding process from a safe distance and learned that there was nothing to fear, and this has helped to tame them down. The hand-reared Pileated I have seen and owned were just as tame and confiding as a Princess Alexandra—but not so their nest-reared brothers and sisters!

In this flight there was also a pair of Turquoisines. From past experience Pileated have been found to be very tractable and Bourke's and other equally inoffensive species are quite happy when housed in large aviaries with Pileated. Despite their rather formidable-appearing beaks they are not aggressive with smaller birds and are not destructive to any but the very softest woods—at least, in my experience.

This particular pair have been in this aviary since 1953. At first the pair were nervous and flighty, and it took them a full year to settle down. Gradually the pair became more quiet and acted quite sensibly whenever I had to clean their aviary, etc.

During the 1954 season the pair became very active and indulged in a great deal of extra flying and calling. The male appeared more anxious to nest than the hen, but eventually nothing happened and the pair fell into an early moult.

In 1955 the male began calling and displaying to the hen in March. By the end of March both birds were flying about a great deal and the male was occasionally seen to feed the hen. In April the male began feeding the hen frequently and the pair were observed mating on two different occasions in the morning.

It was at this point that events took a rather unexpected turn. Instead of taking one of the two large boxes especially hung for them at the rear of the aviary the hen chose the nest-box intended for the pair of Turquoisines. This was not a large box, being about 12 inches high, 8 inches deep, and 6 inches wide. To top it all off the hen did not enter through the entrance hole but instead she entered through the roof of the box! This was accomplished quite easily since the top of this box was split, and by doing a little pushing and nudging

she was able to separate the boards enough to enter. It had never entered my head that the Pileated would choose this box—which was hung in the front part of the aviary which the Pileated had always avoided like the plague! It might be added that the Turquoisines were so put out by all this unseemly house hunting that they nested in one of the large boxes provided for the Pileated.

The hen Pileated did all the house hunting herself, and the cock never appeared interested in any of the boxes provided. At this time it was considered unwise to take this small box down—because this might put the pair off and they would not nest at all—so with my fingers crossed they were allowed to proceed with their plans.

It was fully expected that the hen would sit like a feather, but she very agreeably surprised me by sitting very tightly and never coming off the nest except when absolutely necessary.

After incubation actually started the cock stopped calling and became very quiet. This seems to be a rather general happening and I have observed similar behaviour with other species. Doubtless it is a safeguard to avoid calling attention to the sitting hen.

Babies were heard on the twenty-fourth day after incubation started. The cock did not enter the nest-box, but he did feed the hen whenever she would come off the nest. Sometimes he would fly to the top of the nest and look in, and call to the hen, but the cock was never observed actually to enter the box. Because of the small size of the box, and the method of entrance, it was very nearly a physical impossibility.

The diet while feeding the young was as follows: a dish of mixed grains (millet, oats, canary, hemp) and a dish of sunflower was provided, along with two large dessert apples each day, one orange, and a fresh ear of corn, and all the *poa annua* and *pyracantha* berries available.

For the first few days the young could be heard being fed, and then from the fifth day on it became apparent that all was not well. The hen would be off the nest a great deal, and neither bird appeared interested in the soaked bread, etc., that most parents with a family to feed appear anxious for. An inspection of the nest on the fifth day revealed that there had been four eggs laid and that three of the eggs had hatched, but that the young had been trampled to death—doubtless by the fact that the hen had literally to jump down into the nest from her mode of entrance.

The nest was taken down, and then completely scrubbed with a strong wire brush, dipped into a disinfectant, and hung up again after a few days. However, the parents did not appear interested in the nest and there were no further attempts at nesting.

If this story has a moral it is doubtless centred around the absolute necessity of having a decent-sized nest-box for birds of this size.

In 1956 the pair reared a single youngster—having the misfortune to lose four young during a heatwave in May. This was a disappointment, but possibly in 1957 they will be lucky and rear a family of more appealing numbers.

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## THE BREEDING OF THE CUBAN AMAZON PARROT (*Amazona leucocephala*)

By EDWARD BOOSEY (Keston, Kent, England)

We have two pairs of Cuban Amazon Parrots at the Keston Foreign Bird Farm, one of which successfully reared two young ones during the 1956 breeding season—so far as we know the first time the species has ever been bred in captivity.

As they are among the more rarely imported Amazons, I give the following very brief description for the benefit of those who may not be familiar with their appearance. Bright darkish green with black edges to the feathers, these being widest and most pronounced on the neck and forepart of the body. Face white with a beautiful patch of deep coral pink on the throat. A considerable amount of vinous colour on the belly and of rich blue in the wings. Bill, whitish. It is when the wings are partially opened and the shoulders thrust forward in display that one can fully appreciate the great beauty of these Amazons. They are perhaps a trifle smaller and slimmer than the well-known Blue-front.

We have had the four adults for about four years, and they were obviously young birds when they arrived, at which time they were desperately wild, but they have gradually calmed down and are now quite steady with people they know.

Pair number one were given a hang-up nest-box with natural bark on the front round the entrance hole and soon started spending quite long periods inside it. Then they seemed to lose interest, partly, I think, because their aviary was not in a sufficiently secluded position.

Pair number two, however, were given a grandfather clock type nest-box, also with natural bark on the front, and soon took to it, the hen starting to sit about the middle of May.

By the end of June the parents were eating much more than usual and on one or two occasions I thought I heard young ones being fed in the nest, so I was glad that I had already augmented their diet with a daily allowance of such extras as a cube of stale bread previously soaked in sweetened milk, as well as boiled potatoes and carrots and

plenty of seakale beet and apples. I also supplied flakes of boiled white fish, of which our Blue-fronted Amazons were so fond when rearing young, but it did not seem to appeal to the Cubans, so I discontinued it.

A couple of weeks or so later I found myself in the dilemma which must be familiar to those aviculturists who think as I do, that nesting birds are much best left well alone. Although the Cubans were still eating abnormally large quantities of food, there was a distinct charnel house smell in the vicinity of their aviary and I had horrible visions of one of the young ones dead in the nest and the survival of the others possibly hinging upon the removal of its decaying corpse! Incidentally, the origin of this stench was never discovered, but I think it must have been something that had died in a rather dense thicket close to the aviary. Nevertheless, at the time I felt sure it must emanate from the Cubans' nest-box, so I decided to shut the parents in the shelter and look in. A hurried glance in the rather dimly-lit depths of the grandfather clock box disclosed two very healthy-looking about half-grown young ones and I thought I caught a glimpse of a third, but this proved later to be incorrect.

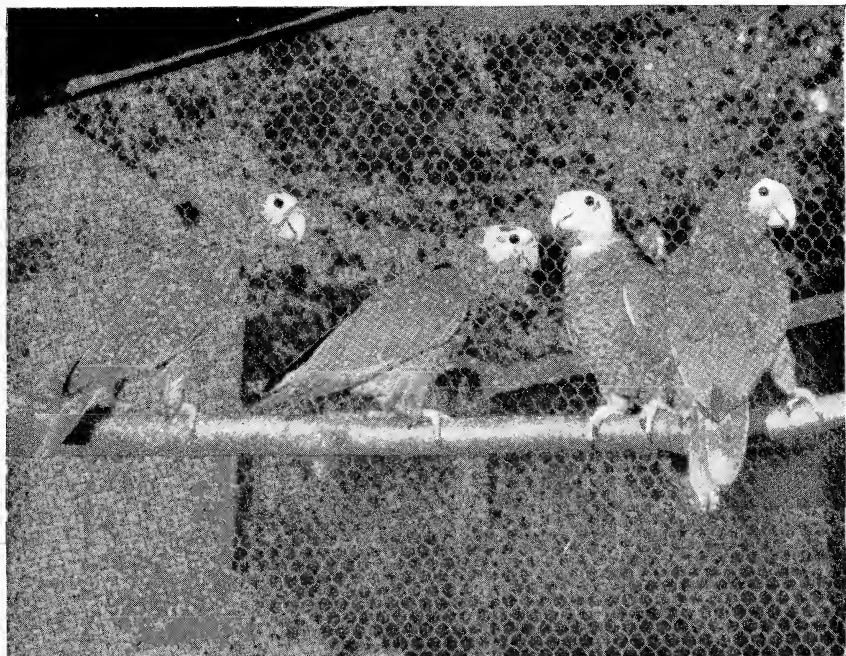
The two youngsters continued to flourish and when they were within a week of fledging could be heard climbing about on the wire ladder inside the box, and they periodically came up to the entrance hole and looked out.

The first one to emerge came out on the last Sunday in August and proved to be a most perfect specimen with not a feather out of place and hardly distinguishable from its parents, except for the almost complete lack of vinous colouring on the lower breast and abdomen and the fact that, in the green areas of the plumage, the feathers were much less heavily bordered with black than in the adults.

Then the most extraordinary and I should have said quite unheard-of thing occurred: I thought I knew most of the strange and unpredictable things that birds will do, but the parent Cubans proceeded to spring a completely new one on me.

They seemed to be terribly excited at the emergence of their first-born and kept on flying about the aviary, then settling one each side of it and frantically preening its feathers, so I decided they needed complete quiet and left them. That was in the morning and I did not go near them until late afternoon of the same day, only to find that they had denuded the young one of every single head feather, giving it a vulturine appearance, but had mercifully left all the rest of its plumage intact and untouched.

The second one came out the following day, just as perfect a specimen as the first, and although the parents treated its appearance rather more calmly they were unable to resist the temptation to pluck its head—though only slightly this time—and the degrees of plucking



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[Alec Brooksbank

The two young Cuban Amazons, photographed a few days after fledging, are seen between their parents. Both left the nest in perfect feather, but within a few hours had had their heads plucked by their parents—the first to fledge (right-centre) coming off worst, while the second (left-centre) had only a few feathers removed. Now (about five weeks after being taken away from their parents) they have re-grown all their head feathers and are again as perfect as when they first left the nest.

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are clearly shown in the photograph which was taken about a week after the young ones left the nest.

It is, alas, all too common among parrot-like birds to pluck their young ones while still *in* the nest, and leave off once they are out of it, but the Cubans' reversal of this process was totally unexpected and particularly infuriating—seeing how perfect the young ones were just a matter of a few hours before.

However, as I have said, the plucking fortunately did not include any of the body feathers, and now that the young ones have been away from their parents for just on five weeks they have re-grown all their head feathers and are once more as perfect as they were when they first left the nest, with the pink areas remarkably vivid for such young birds.

They are extremely healthy and lively, and are just starting to indulge in the usual cheerful morning and evening medley of Amazonian cries.

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As described above, Edward Boosey has bred the Cuban Amazon Parrot (*Amazona leucocephala*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

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## BIRD NOTES FOR 1956

By J. DELACOUR (Los Angeles, California, U.S.A.)

Bird keeping in California is made so easy by climatic conditions that the rearing in my Los Angeles aviaries of many rare doves is nothing much to boast about. If I have not been more successful, it is because I am not free from a terrible disease of most aviculturists: I keep too many birds and they interfere with one another during the mating season, which lasts the greater part of the year in a good climate. To be really successful with doves, each pair of large size should be kept alone in their own aviary, where also one pair of small ones can be placed, as well as finches and little quails. I follow this rule for the rarest species, but I have to associate many pairs in larger flights. There are some good results, but also losses of eggs and young, and some pairs do not find enough privacy to breed. The following

species of ground pigeons were reared : Bartlett (4), Bleeding-heart (7), Mountain Witch (1), Chiriqui (4), Martinique (4), as well as some Brush Bronze-wing, Green-winged, Blue Ground, Cape, and silver Diamond Doves, and lots of Peruvians and Pigmies.

Twenty Gouldians and five Parson Finches were also reared, but most other finches were little successful, due to overcrowding. Among my new birds in Los Angeles are Fairy Bluebirds, Hooded Pittas, and an Emerald Starling.

The breeding season at Clères was handicapped by Mr. Fooks' illness during the spring. However, Pheasants of the following species were raised : Mikado, Elliot, Cheer, Horsfield, Swinhoe, Siamese Fireback, Red and Sonnerat's Junglefowl, Green and Black-winged Peafowl. Blue, Crowned and Stanley Cranes hatched, but were not reared. Many waterfowl bred, the most interesting young being 5 Andean Geese, 10 Philippine and 5 Hawaiian Mallards. The latter come from a pair which I had kept three years in Los Angeles without good results. There were young of several species of doves, particularly Brush Bronze-wings, and various parakeets.

I spent the months of March, April, and June in South America, first with an expedition of my Los Angeles County Museum to Brazil, later on visiting Argentina, Chile, Peru, Ecuador and Colombia, in the company of Mr. and Mrs. Dillon Ripley, in the interests of the International Committee for Bird Preservation. In the course of this very interesting journey I had an opportunity to visit some collections of live birds. The new Zoo in Rio de Janeiro has very good aviaries of parrots and other large birds, both Brazilian and exotic, and a number of small birds kept very successfully, in ones or twos in separate cages. The large Buenos Aires Zoo, which had gone down during the Peron regime, is now being renovated. The small Zoo at Santiago contains many interesting Chilean species.

I saw some good private collections in the vicinity of Rio de Janeiro, where Dr. E. Béraut keeps in a planted verandah a beautiful collection of Humming Birds, which he and his collectors obtain throughout Brazil. But the visit that I made with him to his friend Mr. F. Ruschi, at Santa Teresa, Espirito Santo (the state just north of Rio) will remain in my memory as one of the greatest thrills that I ever had. Mr. Ruschi is a dedicated Brazilian nature-lover. He has single-handed organized remarkable wild life preserves in his native state, which possesses one of the most magnificent fauna and flora on earth, unfortunately terribly ravaged by man during the last two hundred years. Mr. Ruschi knows birds as well as plants ; his property contains museums, gardens, and aviaries of the greatest interest. In particular he has built an enormous flight, 300 × 100 feet and 30 feet high, where hundreds of Humming Birds live and breed freely, including the lovely little Coquette. I saw fifteen on a bush, all reared

by one original pair. There are about twenty local species in this aviary, and one can also see several hundreds of wild Hummers in the garden. Dozens of them are always buzzing as they drink sugar-water from bottles hung around the verandah of the house, a delightful sight. Furthermore, a beautiful large (100 ft. long) house has been built, with a passage for visitors along its front, to accommodate the equatorial species from Amazonia which will not stand the cool nights of Santa Teresa (altitude 3,000 feet).

Both Mr. Ruschi and Dr. Béraut now entirely feed their Hummers on sugar- or honey-water and on quantities of fruit flies. Even the difficult, mostly insectivorous, species of *Phaetorui* and *Pygmornis* do perfectly well on such a diet.

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## BREEDING THE PAINTED QUAIL

By DAVID SETH-SMITH (Guildford, Surrey, England)

Mr. Walther Langberg has given us an interesting account of the breeding of the Painted Quail in Copenhagen but, as he does not give the scientific name of the bird, he might be referring to *Turnix varia*, one of the Hemipodes, which in Australia is known as the "Painted Quail". However, from his description, Mr. Langberg's bird is obviously *Excalfactoria chinensis*, a bird which I was one of the first to breed in England some fifty years ago. Since those early days this very attractive species seems to have been rarely imported until quite recently, and now that it is with us again no doubt aviculturists will be wanting to breed it, and my experience may be of some help.

Mr. Langberg writes: "Many hens are inclined to lay their eggs all over the place, or to scatter them around after laying, before they eventually decide to lay in the nest; some hens, indeed, never seem to settle down to serious nesting operations and continue to lay their eggs broadcast." This is, I believe, the experience of many who have kept these birds in the ordinary type of aviary with a sanded floor, and perhaps very little grass in the flight.

My aviaries were constructed with fairly large outside flights, some 12 or 15 feet each way, the height being immaterial so far as quails are concerned, and the grass was allowed to grow long. As soon as the quails were allowed into the paddock in the spring they commenced to form tunnels through the grass, and at the end of one such tunnel the hen would make her nest, perfectly hidden from all prying eyes. One could only guess where the nest was situated by watching the hen appear and disappear into a tunnel and notice the movement of the grass as she proceeded along it. It is advisable not to be too inquisitive and not on any account to disturb the grass to examine

the nest, but patiently to wait until, on about the seventeenth or eighteenth day after you first noticed her disappearance, she is seen to appear with her brood of the smallest and loveliest chicks you can imagine. You will have noticed her appearance from time to time at the feeding place during incubation to satisfy you that all is going well.

I made a small portable run, about 5 feet by 3 feet, of 9 in. boards at the sides and wire netting top, into which I gently drove the hen and her brood so that they could have special care and attention for the first week or so of their lives. A piece of waterproof material was placed over part of this for shelter and part of the top made to open for feeding. When quite young there is no food so good as ants' eggs, fresh and newly dug up. I used to take a large tin and a trowel and collect a supply that would last for days and I gave a good supply each day though, as Mr. Langberg says, the chicks very soon begin to take small seeds as well as insectivorous soft food.

In any type of aviary, even in a cage, these little quails will lay plenty of eggs—in fact far too many—but, in my experience, without the chance of hiding her nest in the grass the hen is unlikely to sit; but given the conditions I have described, success is pretty certain, barring such accidents as floods! And my experience of these birds was not confined to just one pair; I have had several and all behaved in the same way, including examples of the Australian race, *E. lineata*, a slightly smaller and darker race than the type. In Australia this is known as the "King Quail". Although newly imported, these bred just as freely as the others when given the right conditions, and the chicks were at first almost black. Two broods of four or five were reared each season.

One difficulty with the non-perching quails when kept in outdoor aviaries is that, although they are generally perfectly tame, they are liable at times suddenly to panic, especially at night, and to fly up like rockets from the ground, hitting the top of the aviary and being either scalped or killed outright. Owls or cats are probably to blame, but whatever the cause efforts must be made to prevent it either by cutting the flight-feathers of one wing or, perhaps better still, pinioning. In the wild state these birds rarely fly, only doing so to escape from predators or to travel from one district to another, so it is no hardship whatever if they are prevented from flying altogether, and it in no way detracts from their appearance.

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## ON BREEDING WHISTLING DUCKS

By S. T. JOHNSTONE (Slimbridge, Glos., England)

We are fortunate at the New Grounds in having representatives of all species of this most interesting group of the Anatidae which link the characteristics of swans, geese, and ducks. As in the former two, they have reticulated epithelium on the tarsi, are long-necked, and the plumage of both sexes is similar. *Arborea* in particular has been noted to graze but they mostly feed as do ducks, and *bicolor* and *arcuata* dive a great deal. There are at the time of writing examples of the following eight forms :—

- Fulvous Whistling Duck (*Dendrocygna bicolor*)
- Wandering Whistling Duck (*Dendrocygna arcuata*)
- Javan Whistling Duck (*Dendrocygna javanica*)
- Eyton's Whistling Duck (*Dendrocygna eytoni*)
- White-faced Whistling Duck (*Dendrocygna viduata*)
- Southern Red-billed Whistling Duck (*Dendrocygna autumnalis*  
*autumnalis*)
- Black-billed Whistling Duck (*Dendrocygna arborea*)
- Spotted Whistling Duck (*Dendrocygna guttata*)

Of these, five species have bred at Slimbridge. Five species are kept full-winged and seem to enjoy liberty a great deal ; they fly often and quite high. Unfortunately, although the main flock have stayed with us, odd pairs have strayed away. They have a predilection for perching on chimneys, roofs, and gateposts and we have erected perching posts especially for them.

From their behaviour in captivity one would have thought that, in their natural habitat, *arborea* and *arcuata* were inveterate tree nesters. Our birds invariably use the barrels and boxes provided for Carolinas. But apparently this is not the case (Delacour, *The Waterfowl of the World*, Vol. I). We have found that *autumnalis* likes to nest in much denser cover than other members of the group, preferably under thick bramble and brushwood. Nevertheless, although so difficult for us to locate, the eggs suffer greatly from the attention of vermin, aided no doubt by the fact that the female leaves the eggs uncovered during the whole period of laying. The clutches are relatively large (from nine to sixteen) and fecundity is a strong point : a pair of *autumnalis* laid seventy-two eggs in one season. The eggs are invariably white and the shells are of roughish texture—so that we have found it difficult to distinguish those of the bantams used as substitutes. Both sexes incubate and the nest is never left unattended once incubation has begun. Perhaps for this reason there is no lining of the nest with down.

Our records of the various incubation periods are as follows :—

<i>D. bicolor</i>	.	.	26 days (30–32 days)
<i>D. arcuata</i>	.	.	28 days (about 30 days)
<i>D. autumnalis</i>	.	.	26 days (27 days)
<i>D. viduata</i>	.	.	26 days (28–30 days)
<i>D. arborea</i>	.	.	30 days (30 days)

It is noteworthy that four of the five species seem to have slightly shorter incubation periods than those given by Delacour (shown here in parenthesis).

Fertility and hatchability of the specimens at the New Grounds are high compared with other groups. An interesting point has been observed at hatching time ; a relatively high percentage of eggs have the shell pipped near the “equator”, an observation that has not been noted in other genera.

The day-old young of any species of whistling duck are particularly attractive. The characteristic feature of their downy pattern is the light band circumventing the occiput and dividing off the lower edge of the dark cap to form the cross stroke of a “T” of which the down stroke carries down the back of the neck.

By far the most striking is that of *autumnalis* which is clad in a wasp-like contrast of vivid yellow and black. *Viduata* and *arborea* have similar patterns, but of considerably less brilliance. *Bicolor* and *arcuata* are purplish-grey shading to an almost black cap, the latter being distinguishable by a light supraorbital stripe.

It has been our experience that all birds of the genus are extremely apprehensive if touched and from day-old duckling to adult when handled they give vent to a high-pitched scream. Nevertheless, they are, when fully grown, very tame and have an insatiable curiosity in all things human.

The ducklings are particularly unhappy in cold, wet weather and appear to thrive only if the temperature is moderate. They have an idiosyncrasy that causes them a deal of discomfort in that (even when they are supplied with a minimum of drinking water) they will carry their mash to the water, immerse their bills, and, sucking water up at the nail, eject it through the sides together with some of the mash. Thus they contrive to cover themselves with a sticky mess and we have lost a number of ducklings as a result of this condition. If given enough water in which to bath and swim they do attempt to wash off the paste, but we have found that it is necessary to supply artificial heat in the form of infra-red lamps. The aforementioned state has occurred in three of the five species reared at the New Grounds, although it is not the inevitable sequence of events and many broods have been reared without any duckling achieving this appearance of emaciated dejection.

The fragility of the young does not make for successful rearing if left at large with the parent birds. Similarly, if caught up and separated from them the babies do not thrive. But if one can manage to catch the adults up as well and put them in an aviary there is an excellent chance of their survival, a fact we have demonstrated on several occasions.

The Southern Red-billed Whistling Ducks are by far the most fascinating of the group; they have an abiding interest in all our activities—if able they will always attend the uncrating of newly arrived birds. Another form of entertainment indulged in, a rather troublesome one, is the enjoyment they derive from trundling the eggs out of other ducks' nests.

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## NOTES ON THE CITRON-CRESTED COCKATOO

S. B. KENDALL (Chertsey, Surrey, England)

Readers may remember my account of the breeding of the Citron-crested Cockatoos, whose picture appears in this number. In the September–October issue of 1955 I described the events up to the time when the young fledged. Although I disposed of the young I still have the adult pair and they had at least partial breeding success again in 1956. Since September, 1955, there were, however, a series of mishaps from which some avicultural morals can be drawn and an account of which may be of interest to those of our members who are trying to breed the larger parrot-like species.

The first mishap concerned the adult male of the breeding pair. On the 23rd of September, 1955, I began to think (perhaps wrongly) that the young male was getting into trouble with his parents, which I accordingly removed to the adjacent (smaller) flight. As, however, it appeared that the young were eating very little during that day, I reunited the family by putting all together in the smaller flight. Here they remained until 5th October. On that evening I came home at dusk to find the whole party sitting outside in the unprotected flight in torrential rain. I entered the flight to try to move them into the shelter; a lot of very large birds panicked in a rather small and over-perched flight and next morning the old male had a hiped wing. He seemed to have damaged the terminal joint when flying hard between the perches and has never fully recovered, although he can fly short distances and is able to mate without any difficulty. The moral here (which, of course, I knew as well as anyone) is not to enter aviaries at dusk unless the birds are very accustomed to the position of the perches.

The second mishap occurred after I had finally separated adults and young. Owing to the fact that the young hen seemed extremely slow

in becoming self-supporting, I left the parents in the adjoining aviary, separated in one place by a single layer of 2 in. chain-link netting. Feeding through the wires gradually ceased and the young were due to be sent to their new owner on 24th November. I left them, on that morning, in perfect condition and appearance and arranged to come home at lunch-time to put them in the travelling-boxes. I arrived to find the aviary (so it appeared to my appalled eye) a welter of blood with the baby hen savagely bitten on the foot. Fortunately a good and rapid recovery took place and, by the report of the killing of a young Citron-crest by the parents at Whipsnade, it seems that I was lucky to have such limited damage. The moral is, of course, that if an apparently happy family group is broken up, great care must be taken to ensure that the breeding pair and the young are properly separated. The old birds will treat the young as they would any other potential enemy of the same species. E. N. T. Vane, who saw the arrangements shortly before the accident occurred, will remember warning the owner as to what might happen.

The third mishap is sufficiently near still to influence the course of events this season. During the early spring of 1956 the cockies were making desperate attempts to start nesting and their hole-digging in the aviary floor assumed major proportions. On 7th April they were switched into the breeding aviary. On 7th May both were in the barrel at night and I imagine that an egg was laid at that time. On the morning of 10th May, the female was in distress in the shelter, unable to fly and showing all the signs of egg-binding. (How providential it is that egg-bound hens come out of the nesting-boxes.) She was at once brought into the house and a heroic temperature raised in the smallest bedroom with the aid of all available domestic heating appliances. Shortly before six at night she laid an egg on the floor of the parrot cage where she was confined. The egg appeared thin-shelled, although otherwise perfect, and was put aside for measuring while the owner celebrated in the usual way. Unfortunately, by the next morning it had dehydrated and collapsed, so that accurate measurement was impossible. The hen Citron-crest made a very rapid recovery and was returned to her aviary on the evening of the following day. I had qualms about doing this, but was influenced by the fact that the cock had remained guarding the first-laid egg for the thirty-six hours during which the hen had been absent from the flight and by the belief that there were no more eggs to be laid.

The pair has incubated steadily ever since and at the time of writing (10th June, 1956) should have hatched. I am hopeful of the outcome but not optimistic. I am not sure that there is any moral in this story. As far as I am aware nobody knows why birds become egg-bound; the condition certainly seems to involve the temporary paralysis of more than the oviduct itself and there is some sort of connection with



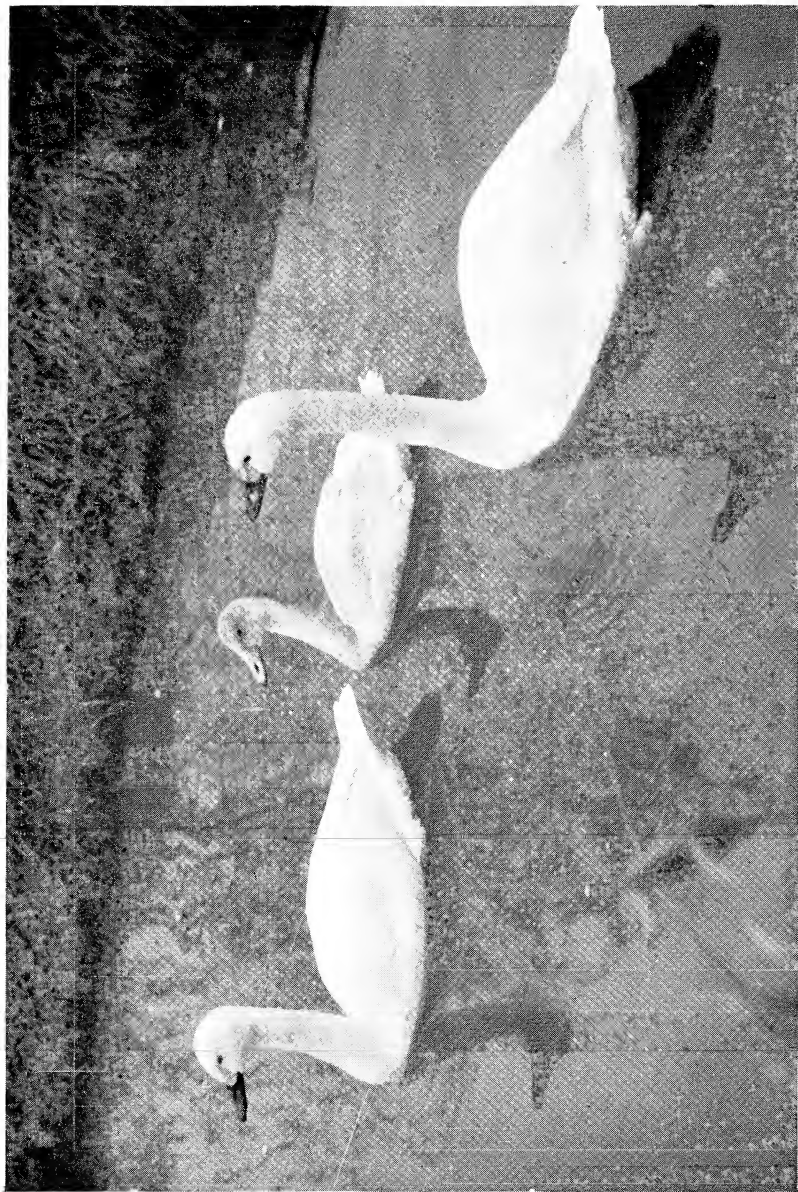


[Tom Spence

CITRON-CRESTED COCKATOOS AND YOUNG.

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To face p. 23.



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To face p. 27.

BEWICK'S SWANS AND CYGNET.

[J. V. Bear

cold weather, at least as far as aviary birds are concerned. I do not think it would be practicable to hold back the Citron-crests from nesting longer than I did.

Anyway, I still have my hen.

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## BREEDING OF BEWICK'S SWANS

By S. T. JOHNSTONE (Slimbridge, Glos., England)

We are glad to report that our Bewick's Swans have nested, hatched, and reared young at the New Grounds. It is understood that the species bred at Woburn before 1914, but we know of no other record and unfortunately we have no details of the first record.

The male of the pair at the Wildfowl Trust appeared on our marsh in November, 1948. It was a bird of the year, and, having lived with the wild geese for some days, ventured into our rushy pen. Eventually he was induced to come and feed with our tame birds and by degrees enticed into a trap. For eighteen months he lived with our Whistling Swans and then we managed to obtain a wild-caught female from Holland. Owing to shortage of space and the belief that these birds were unlikely breeders, they were placed in a rather unattractive pen measuring some 15 yards by 20 yards in size with a very small area of water by accepted standards.

The pair showed no signs of breeding or even mating before 1956 but on 2nd June it was noticed that there were the rudiments of a nest constructed of the rush growing in the pen. The following day both birds were observed building, though they still remained as shy and retiring as ever. The female was seen sitting and shaping the nest on successive days and then to our delight on 6th June we found the first egg. Three eggs formed the clutch and the average weight was 265 gm. and dimensions were 118 mm. by 82 mm. The male was never observed to take part in incubation and indeed, compared with other swans, did not offer very great defence of his consort when the nest was approached.

The first cygnet hatched on the twenty-ninth day and the second in thirty days. The third egg was infertile.

The cygnets are enchanting little things of white down with a steel-blue overall appearance, their bills and feet a delicate pink. Much to their parents' apprehension they became quite tame and would approach quite close when their food was brought. Their diet consists of Spratts' Maxco reinforced with an extra 8 per cent protein and

every kind of pond and water weed obtainable—duckweed, water-cress, water celery, horned, curly and Canadian pondweeds, hornwort, and grass. In spite of all efforts one soon fell behind and eventually died when six weeks old. The remaining cygnet continued to thrive and showed signs of feathering when eight weeks old. By sixteen weeks the bird was fully feathered, the plumage being a dirty white, considerably lighter than that reported for Whistling and Trumpeters. The bill remained pink with the exception of the tip. The legs have lost their flesh colour and are now blotched with grey.

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## SOUTH-EAST ASIA NOTES

By S. DILLON RIPLEY (Litchfield, Conn., U.S.A.)

My wife and I spent five months primarily in Indonesia in the summer and autumn of 1954. It was a trip made more vivid for me by the fact that I had spent fourteen months collecting birds in New Guinea and Sumatra in 1938 and 1939. An account of some of my experiences looking for live birds during those trips appeared in the AVICULTURAL MAGAZINE in 1938 and 1940. Naturally to a returning visitor the main mental preoccupation is with the changes which exist on every hand, these and the aura of speed which hangs over the world to-day, rendering every impression more fleeting, making it so much harder to savour things, to drink in the surroundings.

When I reached New Guinea in the autumn of 1937, we had been ten months out from New York on a small schooner. We were more or less attuned to the pace of our surroundings. Now one can fly KLM to Djakarta or Biak in under three days from New York. It takes days in Java, weeks in New Guinea to get over a transition like that.

Our first stop in South-East Asia was Bangkok, where we spent three days, primarily to rest up after the long flight from Europe. I was very much pleased, however, to meet a distinguished Thai doctor and naturalist, Dr. Boonsong Lekagul, who among his manifold other interests, is developing the first contemporary Siamese Zoo. We unfortunately did not get to the Zoo while we were in Bangkok, but I understand it has made a good start with Gaur, deer of several species, tiger, and other mammals. Apparently birds are not much in evidence as yet. But there is promise for the future in Dr. Boonsong's energy. The bird market in Bangkok is most disappointing, a few miserable huts along a canal near Wireless Road. Mostly the dealers sell poultry and domestic pigeons, but there were a few doves, some jungle fowl, and munias and weaver birds. Fortunately for them

wild birds are often bought in Buddhist countries to be released for merit, a welcome deliverance to such poorly kept creatures. A tame Adjutant Stork kept at liberty by one of the shopkeepers provided the single exotic note in the assemblage.

Our next stop was Djakarta, now a vast city suffering the intense pangs of post-war overcrowding. Large suburban cities, such as the new Kemajoran, are being hastily put up in the outskirts in an effort to keep pace with the growing pains. The pre-war Zoo still exists in a small park in a residential part of the city. The park is brightly illuminated and has cinema, games of chance, tea shops, etc., so that the atmosphere is rather carnival-like. We avoided it on a friend's advice, but did visit the bird market, which is in the general produce market area. Perhaps because it was raining, our general impression was a poor one. Sloshing about over heaps of manure and rotting vegetation, staring up into the dank recesses of tiny huts at nests of dirty cages packed to bursting with huddled, frightened, soiled little birds, was an unhappy experience.

The variety was considerable, as bulbuls of several species, babblers, barbets, starlings, mynahs, munias, and weaverbirds were there. We saw several Green Javan Jungle Fowl also, but they were all cocks, evidently trapped by the use of a caged captive female. One of our friends who lived in Djakarta had been buying a number of bulbuls, dyal thrushes, and other common cage birds, but the mortality rate was high, I am afraid due to the conditions of trapping and keeping the birds in the market.

We spent one or two days driving about in Java, and managed to see a few local birds. It always seems strange to see Java Sparrows flying about at liberty, as they do in the palace enclosure in Djogjakarta. They look as if they must have just that moment escaped from a cage. We saw hawks of several species. Brahminy Kites, *Haliastur*, and the Serpent Eagle, *Spilornis*, were very common all along the coasts, and in the hills I saw a small falcon. Minivets were common in the lower hills, as were bulbuls, coucals, or crow pheasants, the Golden Oriole, shrikes, tits, the White-bellied Swiftlet, and the Pink-headed Flowerpecker. Nearer the towns mynahs and crows and an occasional drongo were almost the only bird life visible. The human population is so great on Java and so constantly increasing that it seems hard to imagine that birds of any sort can withstand the hordes of children armed with catapults much longer!

The Zoo in Surabaya was a delight, still as good as ever. It must be by far the best Zoo in South-East Asia, if not in all Asia. It certainly is better than the Calcutta Zoo, and certainly better than anything in Japan, although I am not up to date on what the last few years have produced in that country.

The Surabaya Zoo has the best kept small birds that I have seen

anywhere in the tropics in a public garden. Such difficult species as woodpeckers, the Golden-backed, pittas, barbets (three species), forktails, laughing thrushes, babblers, among these *Turdinus* and *Kenopia*, rainforest species, and hanging lorikeets, all were apparently thriving in roomy, beautifully planted aviaries, with adequate sheltered quarters in the rear, and fresh, clean pans of food and water, always a problem in a hot climate. The present success of this Zoo is a heritage from two clever Europeans, brothers, who had worked for the Gardens for years, and now I understand have emigrated to New Zealand. They had trained the keepers well, and there was no visible slackening up of effort. Six magnificent Komodo Giant Monitor Lizards or "Dragons" (two are now at the Bronx Zoo in New York), two fine Sumatra tigers, orang-utans, and a Sumatran elephant were notable parts of the menagerie.

Going east we voyaged into the Moluccas or Spice Islands, via the port of Makassar, Celebes. This grotesque swastika-shaped island has now been officially re-named Sulawesi. In Makassar I was disturbed to hear that in 1953 some 200 or more skins of the Greater Bird of Paradise, *Paradisea apoda*, from the Aru Islands, which are also a part of the Republic of Indonesia, had been shipped out of Makassar by a local Chinese trader. These skins are said to be bought locally from crewmen from the coastal steamers coming from the Aru Islands for about 40 Rupiahs each. This sum is equivalent to anything from \$1.50 to \$3.30, depending on official or open market rates of exchange. It was also reported that the skins could be sold for approximately \$10.40 each in Paris or West Germany.

The only pet birds here and farther east seem to be Cockatoos, mostly Umbrella-fronted (*C. alba*), and an occasional Moluccan (*C. moluccensis*), which latter species if obtainable are very expensive, and Eclectus Parrots, with occasional lorries, crimson, or green-winged. All these parrot-like birds are caught as young at the nest and reared on gummy, boiled rice, coconut, and coconut milk, and maize. They obviously survive, but there must be a considerable mortality among the young. As these species are Moluccan in origin, they are brought to Makassar and Java on the coastal steamers by sailors.

In the Moluccas themselves we spent three months on Ternate, Halmahera, Tidore, Batjan, and farther east on Misool. All these islands are as beautiful and unspoiled as ever, their forests largely uncut, except around towns like Ternate, life being much as it has been for centuries. It is still possible to walk out of the town of Labuha on Batjan, for example, where Alfred Russell Wallace stopped to see the Sultan in the 1850's, and to reach jungle, real jungle on foot, after a couple of hours. And it is still possible in this jungle to see Wallace's Standard-wing Bird of Paradise, that curious and

ill-proportioned looking bird, which Wallace had first seen on the day when he stood outside the Sultan's palace, and Ali his faithful assistant ran up with one attached to his belt.

But alas, there is not a living soul on Batjan to-day who seems to know or care about birds of any sort. During our five weeks on that island we asked diligently after local hunters or woodsmen, only to be told that all the principal ones were too old or had died off. No one has ever heard of trapping birds except parrots or cockatoos in their nest holes. No one could do a thing to help us. Perhaps it is just as well that the inhabitants are as indifferent as they are. Certainly nothing is likely to change in a hurry in the Moluccas. The basic driving forces of man, hunger, love, fear, seem somehow in abeyance here, at least the first and the last. Love, of course, triumphs, but for some mysterious reason the population rate is not as staggering as farther west on Java.

At least, though, there are the islands. When typical Western impatience is about to get the best of one, when some delay or exhibition of human frailty or inertia is nearly overwhelming, it is usually only necessary to lift one's eyes up towards the sky, to look out over the majestic sweep of sea and sky and pointed volcanic-cone islands, to be glad to be there. The vivid greens of the islands, the multifarious blues of the sky and the sea, and the incredible panoplied clouds are all there, unchanging, always beautiful. Those sights and the birds we saw, shy, glimpsed often with difficulty, made our trip worthwhile. Much of the rest of travel in these exotic lands has become so burdensome and wearying that I doubt that many would wish to share such a voyage to-day. In many ways it seems better by far to settle down in an armchair with Wallace or Forbes or Guillemard or the others, and read of it all "far away and long ago".

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## LONDON ZOO NOTES

By J. J. YEALLAND

Arrivals during November and December, 1956, include two species and two sub-species new to the Collection.

These are a Finsch's Conure (*Aratinga finschi*) presented by Mr. A. A. Prestwich; two Kansu Babbblers (*Trochaloxypterus sukatschewi*), and three Fohkien Grey-headed Crow-Tits (*Psittiparus gularis fokiensis*) presented by Dr. K. C. Searle, who also sent a Ruby-throated Warbler; and four Persian Chukors given by Professor E. Boswell.

Finsch's Conure, first described by Salvin in the *Ibis* of 1871, is one of the Central American Conures inhabiting southern Nicaragua and western Panama. The Kansu Babbler was first described in 1891 by Berezowski and Bianchi, being found by them in the Kansu Province of north-western China. There is only one skin of this bird in the British Museum. It appears to have had no English name, and the Kansu Babbler seems preferable to Sukatschew's Babbler.

The Chukors are the race *Alectoris graeca werae* of western and south-western Persia and the adjoining parts of Iraq.

The Crow-Tits or Parrot-bills (Paradoxornithidae) are comparatively little known to aviculturists here, and only three species have previously been kept in the Society's Collection. They range from the Himalayas to Indo-China and China, living in reed beds, bamboo and grass jungle. The food consists of insects and their larvae, some seeds, and buds. The birds tear off the sheaths of reed or bamboo stems to expose the insect life sheltering beneath; they also open the stems themselves, and it is here that we see the purpose of the Crow-Tits' powerful bills. Lynes, writing of Heude's Crow-Tit, says, "The rustling, crunching and tearing noises made by a party of birds so engaged may frequently be heard before catching sight of them."

Writing in the AVICULTURAL MAGAZINE (1928, p. 30), Mr. H. C. Eustace says of Webb's Crow-Tit that it is "kept by the Chinese only on account of its ability to be trained for fighting . . . Although when trained they become very desperate fighters, the wild birds are very peaceable and gentle, and are quite safe inmates for any mixed aviary". The Bearded Tit was once considered to belong to this Family.

Other arrivals are a Silver-eared Mesia, an Orange-checked Waxbill and a Chestnut-breasted Finch, presented by Mrs. Y. Channing; a Green-cheeked Parrot by Mr. L. W. R. Jones; a Malachite-shouldered Fruitsucker (*Chloropsis sonnerati zosterops*) and a Black-winged Grackle by Mr. G. Newmark.

Another Swainson's  $\times$  Red-collared Lorikeet has been bred at the Parrot House. The Black-footed Penguins and Cereopsis Geese are nesting.



## COUNCIL MEETING

A Council Meeting was held on 27th November, 1956, in the Council Room, Zoological Society of London.

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## OFFICERS FOR 1957

There were the following retirements and appointments.

Council : Captain A. A. Clarence, Mr. F. T. Jones, and Mr. K. A. Norris retired by seniority.

Mr. G. S. Mottershead, Mr. C. M. Payne, and Mr. J. J. Yealland were elected to fill the vacancies.

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## SOCIETY'S MEDAL

The Society's Medal was awarded to Mr. C. M. Payne, for breeding the Evening Grosbeak (*Hesperiphona vespertina*).

ARTHUR A. PRESTWICH,  
*Hon. Secretary.*

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## AVICULTURAL SOCIETY OF AMERICA

We are delighted to report that our sister Society continues to flourish, with an ever-increasing membership.

The Principal Officers are now :—

Jean Delacour	.	.	Honorary President
Don Rowland	.	.	President
Otis Wade	.	.	Vice-President and Secretary
C. H. Melvin	.	.	Assistant Secretary
Alexander Wiederseder	.	.	Treasurer

A. A. P.

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## BRITISH AVICULTURISTS' CLUB

The fifty-fourth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Tuesday, 27th November, 1956, following a dinner at 7 p.m.

Chairman : Miss P. Barclay-Smith.

Members of the Club : P. C. Bath, Hylton Blythe, A. W. Bolton, Miss K. Bonner, J. O. D'eath, A. W. E. Fletcher, Miss S. A. Fothergill, Miss E. G. Ganner, Dr. E. F. Gleadow, F. Grant, A. V. Griffiths, H. J. Harman, M. S. Henderson, Dr. E. Hindle, Miss S. I. Hobday, G. T. Iles, F. T. Jones, Miss E. M. Knobel, F. Mosford, G. S. Mottershead, K. A. Norris, A. A. Prestwich, D. H. S. Risdon, S. Sanderson,

R. C. J. Sawyer, D. Seth-Smith, H. A. Snazle, A. C. Soanes, E. O. Squire, P. Sutton, Mrs. P. V. Upton, E. N. T. Vane, N. S. Walker.

Guest of the Club : C. S. Webb.

Guests : J. Bailey, J. M. Bowing, S. A. Croucher, Mrs. S. A. Croucher, M. D. Gill, Mrs. E. F. Gleadow, Mrs. F. Grant, Dr. W. C. Osman Hill, Mrs. W. C. Osman Hill, Captain R. S. de Q. Quincey, Mrs. D. Seth-Smith, Mrs. P. Sutton, Mrs. E. N. T. Vane, Mrs. C. S. Webb, M. Weber, Miss F. R. Wood.

Members of the Club, 35 ; guests, 16 ; total, 51.

After the Loyal Toast the Chairman proposed the health, happiness, and future good fortune of Mr. and Mrs. Cecil Webb who were on the point of leaving for Kenya.

"Webbie" in response said that while he and his wife were going to live in Kenya they had every intention of returning to England as opportunity allowed and that on those occasions they hoped to attend Club dinners and so meet many old friends.

The dinner was followed by a *Conversazione*.

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The fifty-fifth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Wednesday, 9th January, 1957, following a dinner at 7 p.m.

Chairman : Miss P. Barclay-Smith.

Members of the Club : Miss J. Barnes, A. W. Bolton, J. H. Briant, W. D. Cummings, Mrs. H. Denny, A. V. Griffiths, H. J. Harman, Dr. E. Hindle, Major V. Dilwyn Jones, Miss E. M. Knobel, Miss M. H. Knobel-Harman, P. H. Maxwell, A. F. Moody, F. Mosford, H. Murray, A. A. Prestwich, D. H. S. Risdon, H. A. Snazle, E. N. T. Vane.

Guests : J. Bailey, R. Bufton, S. A. Croucher, Mrs. S. A. Croucher, Captain R. S. de Q. Quincey, Miss H. Frampton, Mrs. A. V. Griffiths, Mrs. V. Dilwyn Jones, Mrs. A. F. Moody, W. R. Partridge, Mrs. W. R. Partridge, C. M. Payne, Mrs. C. M. Payne, D. C. Rogers, Mrs. E. N. T. Vane, A. N. Other.

Members of the Club, 20 ; guests, 16 ; total, 36.

After the Loyal Toast the Chairman presented the Society's Medal to Mr. Claude Payne for breeding the Evening Grosbeak.

Mrs. H. Denny showed her unique pair of Perfect Lorikeets.

The dinner was followed by a *Conversazione*.

The next meeting of the Club is on Wednesday, **13th March.**

ARTHUR A. PRESTWICH,

*Hon. Secretary.*

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## NEWS AND VIEWS

Sir Edward Hallstrom has consented to be Patron of the Avicultural Society of Australia.

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Breeding reports. F. E. B. Johnson, Temminck's Tragopan, two reared ; B. M. Killick, a nest of four Abyssinian Lovebirds reared.

\* \* \*

George S. Mottershead, Director-Secretary, Chester Zoo (North of England Zoological Society), has been elected Vice-President, International Union of Directors of Zoological Gardens.

\* \* \*

Vogelpark Avifauna, Alphen a.d. Rijn, Holland, report the successful breeding of their Greater Patagonian Conures ; three young reared. This is possibly a world first success.

\* \* \*

Cecil S. Webb has relinquished his position as Superintendent, Dublin Zoo (Royal Zoological Society of Ireland), and, with his wife, will shortly take up residence in Kenya.

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Dr. Sten Bergman, Stockholm, reports the successful breeding of his King Birds of Paradise ; two young ones now five months old. A full account of this remarkable achievement will appear in an early number of the Magazine.

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In the previous number of the Magazine (p. 231) reference was made to the successful breeding of the Cuban Amazon at *Brambletye*. To avoid the possibility of confusion, more particularly among overseas readers, it should perhaps be mentioned that *Brambletye* is the residence part of the Keston Foreign Bird Farm.

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The Silver Medal awarded annually by the Avicultural Society of South Australia, for the most outstanding breeding achievement of the year, will in future be known as the "Simon Harvey Memorial Medal". The medal for 1956 has been awarded to Mr. Bev. Thomas for breeding the Tawny Frogmouth.

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Dr. Alan Lendon sends news of Sir Edward Hallstrom's birds. He reports : "Golden-shoulderedreds have five half-grown young in the nest. The hybrid Yellow-cheeked  $\times$  Cactus Conures are now about nine months old and are very like their mother. Sir Edward also has some two dozen Blue-cheeked Rosellas (*P. amathusia*), the far northern variety of the Mealy Rosella."

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The Royal Zoological Society of South Australia reports forty-one species of birds bred during 1955-56. These include Common Rhea (four), Black Swan (five), Eastern Swamp Hen (three), Tasmanian Native Hen (two), Golden-crowned Conure (one), Crimson-winged Parrakeet (four), Barraband's Parrakeet (four), Queen Alexandra's Parrakeet (five), Brown's Parrakeet (eight), Elegant (six), Splendid (two), and Gouldian Finch (nine).

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Roland A. Muller and his son are rapidly forming a good collection of Australian parrakeets at Santee, California. Last season they successfully reared Golden-mantled Rosella, Many-coloured, Red-rump, Princess of Wales', Bourke's, Barnard's, and Elegant. Young were hatched but not reared by Stanley, Hooded, and Yellow-rumped Parrakeets. About two months ago the Hooded deserted their three half-grown young ; they have further young in the nest at the present time (24th December).

\* \* \*

L. J. Bettison, Oliver, British Columbia, records a successful breeding season. Many-coloured Parrakeet, two hatched, one reared ; Lovebirds, Peach-faced, two young ; Masked, eight ; Fischer's, six ; British Greenfinch, three nests of young from one pair ; Golden-breasted Waxbill, two young ; Black-headed Gouldian, nests of six, two, and five young, from one pair ; Golden Sparrow, three nests from one pair ; Cut-throat Finch, three nests with an average of three, and many Bengalese and Zebra Finches. Nested unsuccessfully : Purple Finch, Evening Grosbeak, Cordon-bleu, Gird Bunting, and Bronze-winged Pigeon.

\* \* \*

Sir Edward Hallstrom writes : " I am having continued success with the lutino Indian Ring-necks. At present fourteen pairs have gone to nest. There are two more Blue and Yellow Macaws and another Glossy Black Cockatoo—on this occasion completely reared by both parents. With the previous one, the female completed the rearing alone. One very interesting item of news is that a pair of Ribbon-tailed Birds of Paradise appear to have mated and are using a nest that was built by the female prior to the male being introduced. For a long time she would not accept the male but now they are very busy. In New Guinea another three Salvadori's Ducks came along. One was missing after several weeks but the other two are now nearly adult—making, in all, five bred in my sanctuary there."

\* \* \*

Dr. Brian Kendall kindly sends further news of his birds. He writes : " Just before I went away for my holidays there were (probably) two young Orange-crests in the nest. When I came back

there was one well-feathered baby with a delightful little crest. Unfortunately, it died about a week later. Further bad luck has been with the Plum-heads. Since I last wrote, in mildly optimistic mood, I have lost the last year's young bird (hatched May, 1955). It was as fat as could be and a very careful P.M. in my lab. showed absolutely nothing. I need hardly say that it was a female: the ovaries were becoming active. It had developed a grey-green head in the first autumn (1955) moult and a dark-grey head in the autumn (1956) moult. I had always believed it to be a hen by the look of its head. As if this wasn't enough—this year's young bird (a lovely one when it emerged) has gone wrong and is now in the house on a diet of vitamins. I am going to bring a pair into a warm room this spring, and to h—— with all the experts. Plum-heads are like Kendall: they like it warm."

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## REVIEWS

THE WATERFOWL OF THE WORLD. Volume II. By JEAN DELACOUR, with illustrations by PETER SCOTT. Published by Country Life, London, 1956. Price £6 6s. net.

This is the second volume of the three projected, which will cover the waterfowl, swans, geese, and ducks of the world. This comprehensive work on a group of birds which have a very wide interest both to general ornithologists and to the more specialized aviculturist, is the result of a happy combination of two experts of world renown on their subject—Jean Delacour and Peter Scott.

As stated in the introduction to the volume under review, the first volume (reviewed in the Jan.-Feb. number 1955 of the AVICULTURAL MAGAZINE) dealt with the more terrestrial members of the family Anatidae. The second volume is confined to one tribe, the Dabbling, Surface-feeding, or River Ducks, which include thirty-eight species of the genus *Anas*, together with five aberrant genera each consisting of one species, which are tentatively placed with *Anas* as their position in the general system of genera and species of Anatinae are still not clearly understood. These are the Pink-headed Duck of India (*Rhodonessa*), Australian Pink-eared Duck (*Malacorhynchus*), the Blue Duck of New Zealand (*Hymenolaimus*), the South American Torrent Ducks (*Merganetta*), and the Freckled Duck (*Stictonetta*) of parts of Australia and Tasmania.

The number of colour plates has been increased from sixteen to twenty-four in order that every member of the tribe and its duckling may be shown in colour. There are twenty-nine distribution maps and a full systematic list, and indices of scientific and English names. This is a worthy successor of the first volume and everyone interested in waterfowl will wish to possess it.

P. B-S.

ZOOLOGICAL PHOTOGRAPHY IN PRACTICE. A contribution to the technique and Art of Wild Animal Portraiture. By HUGH B. COTT. Illustrated. Published by the Fountain Press, London, 1956. Price £2 12s. 6d.

This is the first book to be devoted to a subject which has become of great importance as an aid to scientific research, and also now attracts an increasing number of animal photographers. Birds have always remained favourite subjects and aviculturists who wish to make photographic records of the inmates of their aviaries will find the information crowded into these pages invaluable. The first chapter is devoted to the choice and characteristics of cameras and for serious bird photography the decided preference is for the larger, heavier, and more old-fashioned type. The author then deals with various technical aspects—apparatus and accessories, focussing, exposure, negatives, development, and other details; and the reader is given detailed information, often in tabular form, of the advantages and disadvantages of various equipments and methods. The artistic approach to zoological photography raises a topic on which the author is an authority as he is a rare combination of zoologist, naturalist, artist, and skilled photographer. An elementary knowledge of the principles of picture design and especially the importance of tone will help the photographer to obtain a pleasing and effective picture which impresses the subject on the mind much more effectively than a poor one. But for the full use of a good photograph, a negative of good quality, critical sharpness, and sufficient size is absolutely essential.

The chapter devoted to the scientific approach to zoological photography stresses the value of the camera in recording zoological information, though this by no means excludes the artistic approach. The innate responses and social behaviour of birds, for example, can be recorded much better by the camera than by lengthy descriptions. The use of infra-red photographs opens an entirely new and little explored world to the naturalist, especially in the field of camouflage, and has made possible the photography of animals in complete darkness.

The author has travelled extensively and draws from personal experience in giving advice on the photography of animals under widely different conditions such as tropical rain forests, desert, and savannah. The latter part of the book consists of a series of plates reproducing 68 of the author's photographs of zoological subjects, illustrating various topics discussed in the text; but although very good examples of the photographer's skill they hardly do justice to the originals. The book can be thoroughly recommended to all those interested in a fascinating hobby of great scientific value.

E. H.

**FUNCTIONAL ANATOMY OF BIRDS.** By ALASTAIR N. WORDEN.  
Illustrated. Published by *Cage Birds*, London, 1956. Price 9s. 6d.

This book is based on a series of articles that appeared in *Cage Birds*. The author, a well-known veterinarian and biochemist who was formerly Milford Research Professor in the University of Wales, describes in simple language, accompanied by a series of clear diagrams, the essential features of the anatomy and development of birds. This information is essential for a clear understanding of the real workings of the bird's body in health and disease. The first chapter deals with the general framework of the body—the skeleton and joints—and is followed by an account of the surface anatomy. Successive chapters are concerned with the leg, wing, digestive system, excretory system, reproductive system, respiratory system, blood system, ductless glands, nervous system including ear and eye, and the organs of voice production. Finally there is a chapter on the development of the chick before hatching.

Aviculturists will find the general principles described in this book of great help in a further understanding of the many problems associated with the health, behaviour, general activities, and feeding of birds in captivity. It is a useful addition to avicultural literature.

E. H.

**PARROTS, COCKATOOS and MACAWS.** By EDWARD J. BOOSEY.  
Published by the Rockcliff Press Publishing Corporation.  
London, 1956. Price 21s. net.

The appearance of a book dealing with parrots, cockatoos, and macaws by such a well-known aviculturist will be welcomed by all those interested in these most popular birds. While still a schoolboy Mr. Boosey bred budgerigars and Red-Rump Parrakeets and he has five times been awarded the Avicultural Society's medal for a first breeding in captivity of various species including the African Grey, the Blue-fronted Amazon, and the Varied Lorikeet. He speaks with authority, therefore, in the chapters dealing with the feeding, care and breeding, and common parrot illnesses and how to deal with them. There is also an interesting chapter on parrot-keeping in the past, including mention of a Grey Parrot belonging to Henry VIII, and another which was the favourite of the Duchess of Lennox and Richmond, a mistress of King Charles II. The stuffed body of this parrot is supposed to be the oldest stuffed bird in the world and is preserved in Westminster Abbey.

There are brief descriptions of each species and useful notes on the characteristics of the more common ones, many of which have been kept by the author. It is rather unfortunate, however, that more care

has not been given to the nomenclature of the group, for numerous errors have crept into the text—*Kakatôe* for *Kakatoë*; *Pæocephalus* for *Poicephalus*; *Loppochroa* for *Lophochroa*; *Caliptorhynchus* for *Caliptorhynchus*, to mention only a few of the more obvious mistakes. Also the term *Chrysotis* is retained although this has long been merged in the genus *Amazona*.

The excellent bird photographs illustrating the text were specially taken by the author's partner, Alec Brooksbank, and add considerably to the interest of the book.

E. H.

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## NOTES

### RARE BIRD RECORDS AND "ESCAPES"

The number of birds which have been added to the British List has greatly increased during recent years, no doubt in no small part due to the widespread interest in bird watching and the large number of bird-watchers there are all over the country. In the case of some species, however, there is always a doubt as to whether these are genuine wild birds or escapes from zoos or private owners. With waterfowl this is particularly the case and for this reason the Avicultural Society instituted its ringing scheme for waterfowl, the rings issued being a light blue in order that they should be as visible as possible in the field; an additional advantage in the use of these rings is the possibility of restoring the "lost" birds to their owners.

The Editors of *British Birds* in which records of rare birds are published are always anxious to establish without doubt that the records are of truly wild specimens and to this end the aid of aviculturists is earnestly sought. If anyone has lost a bird which might be taken for a visitor to this country it would be of great assistance if he would report this to the Hon. Secretary of the Society or to the Editor of the AVICULTURAL MAGAZINE.

The most recent "record" confronting the Editors of *British Birds* at present, is a Flamingo seen at Bartley Reservoir, near Birmingham, on 2nd December, 1956. Inquiries from likely zoos have elicited that no bird has been lost from these collections. It seems more than likely that this bird is an escape. Can readers of the AVICULTURAL MAGAZINE help to solve this problem?

Ed.

*The Editor takes no responsibility for opinions expressed in articles or correspondence.*



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### NEW MEMBERS

The twenty-six Candidates for Election in the November-December, 1956, number of the AVICULTURAL MAGAZINE were duly elected members of the Society.

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 J. G. EASTMAN, Reedlings (Bird Reserve), Newdigate, Dorking, Surrey.  
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A. J. BLUM . .	15		0
JAMES K. GUTHRIE	15		0
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### MEMBERS' ADVERTISEMENTS

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### FOR SALE

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Pair young Swinhoe's Pheasants (American stock) £9 10s. *Systema Avium Rossicarum* (Birds of the U.S.S.R.), vol. I, in French, coloured plates; foreword by Jean Delacour, £1.—SYDNEY PORTER, 149 Stenson Road, Derby.

### WANTED

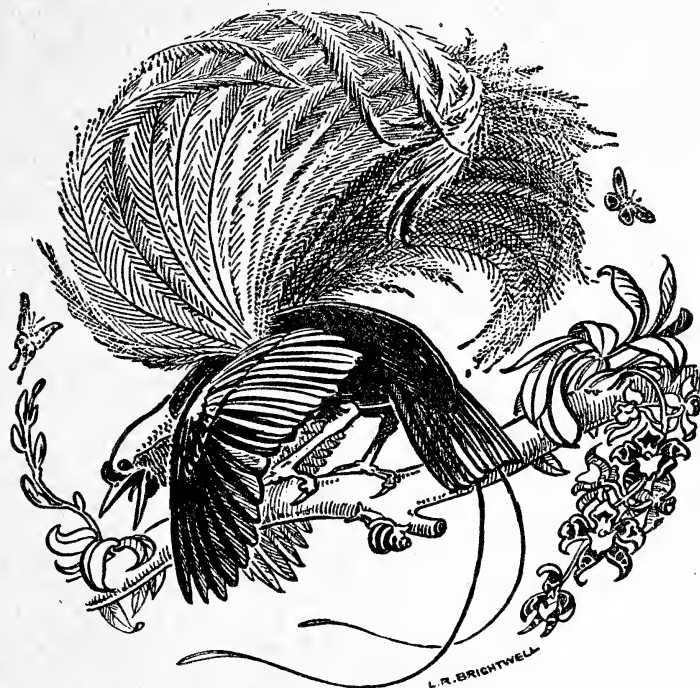
Urgently, female Demoiselle Crane.—Miss B. LOCKER LAMPSON, Keepers Cottage, Copthorne, Sussex. Tel: Copthorne 208.

Golden-mantled Rosella hen.—R. T. KYME, 30 King Street, Kirton, Boston, Lincolnshire.

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Can any overseas member supply me with true pairs of Caiques and other parrot-like birds?—B. M. KILLICK, "Sandholme," Raunds, Northampton.

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# THE AVICULTURAL SOCIETY

Founded 1894

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**Hon. Secretary and Treasurer : A. A. Prestwich,** 61 Chase Road,  
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## THE AVICULTURAL MAGAZINE

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**The Editor : Miss Phyllis Barclay-Smith,** 51 Warwick Avenue, London,  
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*[S. Paradowski*

ROSEATE (LEFT) AND BARE-EYED COCKATOO AT THE ENTRANCE TO  
THEIR NESTING TRUNK.

*Frontispiece*

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY  
AND THE AVICULTURAL SOCIETY OF AMERICA

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MARCH-APRIL, 1957

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## ROSEATE × BARE-EYED COCKATOO HYBRID

By KAROL ŁUKASZEWICZ (Director of the Zoo, Wrocław, Poland)

The female Bare-eyed Cockatoo possessed by the Wrocław Zoo was quite an old bird when, in 1948, it returned from a temporary post-war exile to our bird house. Its very clamorous call, uttered especially frequently in the evening hours, and heard far away in the park, made me suspect that it was a female. For a time it shared the same aviary and company of a Greater Sulphur-crested Cockatoo, then lived with many other parrots, but was much dreaded by them because of its pugnacious character. Finally, it associated itself with a red Macaw until, in 1953, the Zoo came into possession of a Roseate Cockatoo, whose most outstanding quality consisted in a remarkable "repertoire" of some fifty Polish words.

The two cockatoos became excellent friends from the very moment they saw each other and as the Bare-eyed at the same time stopped giving its evening concerts of cries, I thought it proper to give this somewhat unusual couple an opportunity to nest. A trunk of an old elm tree, 5 feet high with a diameter of some 12 inches, was placed in one corner of the aviary. A circular hole measuring 4 inches was made in the front of the bark-covered trunk and below this an oblong fissure invited the birds to work it with their beaks so as to enlarge the shallow cavity inside the trunk. Both cockatoos took great interest in working at the trunk. Day after day the Roseate male left the whole of the ground near the trunk covered with chips and splinters, it worked so hard. Gradually the hole inside the trunk became larger and larger and the birds managed to transform the narrow fissure into a wide entrance to their nest situated a little below the original circular opening.

By the beginning of 1955 it was evident that the friendship of the two cockatoos was of the most serious nature. The best proof of it was an egg laid on the last day of March. The Roseate male and the Bare-eyed female were sitting and incubating most assiduously on

their nest and in the intervals did not stop working at the trunk. After twenty-one days of incubation the keeper found, on the morning of 18th May, that a young bird had hatched and was lying dead on the sand on the ground of the aviary. A conspicuous feature of the young was a well-developed bare area around the eyes.

Six months later, in December, 1955, the cockatoos mated again several times during a week. Eggs, two in number, pure white and the size of a larger pigeon egg, were laid on 6th and 8th January. Incubation began once, the male relieving the female every three hours by day and night, and lasted for thirty-two days. The young ones hatched on 8th February and lived for twelve days. Their rate of growth showed itself to be very good. At the time of death they were covered with conspicuous quills. The explanation of this mishap is not easy. Obviously the parents fed the young birds well and we found no reason to interfere by taking them out of the nest. The birds were absolutely unmolested and the keeper did not even dare to enter the cage because of the aggressiveness of both adult birds.

The post-mortem examination of the two young ones, which were normally developed and weighed respectively 88.5 gr. and 118.0 gr. did not reveal any pathological changes. The stomach and the intestines, however, were copiously filled with sand, which was probably brought with the food. The floor of the aviary was therefore scrupulously cleared of sand and only a small box containing some gravel was left in the aviary for the parents.

Almost immediately after the death of the young ones the parents mated again and eggs were laid on 10th, 12th, and 17th March. The laying of the last egg was somewhat belated and for three days the female (the Bare-eyed) was evidently feeling sick; it could not keep perched normally across the branches but laid along them with its eyes shut and shivering, often with covered wings—a typical picture of what in German is called the *Legenot*. Two eggs disappeared in an unaccountable way leaving no trace. Finally, on 5th April, 1956, a young one hatched and was reared successfully up to the age of twenty-one days, when suddenly the parents stopped feeding it. This was noticed too late and the young one died from under-nourishment.

On 21st and 25th May, 1956, again three eggs were laid. The incubation was regular and lasted from twenty-five to thirty days. The first young cockatoo hatched on 15th May and from the beginning was obviously a stronger bird. The two others did not thrive and died a few days after hatching, on 18th and 20th May. The survivor was left with the parents for ten days, during which it was regularly fed by them. On 26th May, however, as the parents were observed to be neglecting their duties, the old cockatoos were moved to an aviary some distance away and the young hybrid confided to the care of a keeper, Mrs. Teresa Ungert.





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THE LAST HYBRID, JULY, 1956.

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THE THIRD HYBRID. 19.IV.56.

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To face p. 42



[S. Paradowski

MRS. TERESA UNGERT, FEEDING THE LAST COCKATOO HYBRID, JULY, 1956.

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The bird was fed by the keeper from her mouth every two hours between 7.30 a.m. and 6.30 p.m. For the first three days it was given a pap of hard-boiled yolk and toast in this way ; then chopped and crushed sunflower seed and fresh strawberry juice were added. Gradually this diet was amplified by cake, pulped mashed apple, boiled rice with strawberry juice, pumpkin seed, lemon and red currant juice, fresh cherries, and tomatoes.

The young cockatoo grew fast and fledged normally, the quills appearing first on the wings and the crest after the eighth day. After a month the feathers developed to such an extent as to show the colours. The general colouring was that of the father: dove-grey above, dirty rosy-yellow on cheeks and underparts, with pure white primaries. The bare area round the eye, characteristic of the mother (*C. gymnopsis*), was well developed but instead of the blue tinge of *C. gymnopsis* it was a pronounced yellow colour. From the age of four weeks the young hybrid began to utter peeping sounds, when six weeks old it began to preen its plumage. Unfortunately, on 13th August, after a short period of sickness the young cockatoo died of pneumonia, probably contracted during a stay of a few minutes outside the house, when having its photograph taken.

The experiment of artificially rearing a cockatoo hybrid, despite the final negative result, has thus proved successful. The hybrid lived fifty-nine days and it is probable that, in spite of an undoubtedly delicate constitution it might have been brought to complete maturity. The anatomical examination, however, showed that the skeleton of the young bird was rather weak, and therefore in future attempts greater attention must be paid to the supply of mineral components.

The interbreeding of *C. roseicapilla* and *C. gymnopsis* seems to indicate that the two species are more closely related to each other than has been assumed in the past.

## THE BREEDING OF THE LITTLE OWL

*(Athene noctua)*

By C. AF ENEHJELM (Helsingfors, Finland)

In 1951 I got two specimens of the Little Owl from Germany. The birds were exactly similar in size so I had no idea as to the sex. In winter they were kept in a well-lighted indoor aviary about 10 × 4 feet and 8 feet high. They spent the summer in a compartment in our cages for small birds of prey. This compartment is 20 × 5 feet and 8 feet high with an adjoining open-fronted shelter 5 × 5 feet. The upper part is boarded about 3 feet downwards from the roof, giving the birds an undisturbed and well protected shelter. In the climate of Finland we are simply forced to take most birds—even our native ones—inside for the winter, among other reasons, in order to prevent the soft food and meat from freezing as hard as a stone. The keeping of birds and mammals in a climate like our's presents problems unknown to avicultural and zoological colleagues living in milder latitudes. We cannot release the birds into the outdoor aviaries too early in the spring, as experience has shown that, even if kept in only slightly warmed rooms, the birds are rather delicate if put outside in the early spring, even though the same specimens may stand quite low temperatures in late autumn without any ill effects.

In 1952 and 1953 the Little Owls made no attempt to nest, but early in April, 1954, two white eggs were laid on the floor of the flight. On 2nd April, 1955, an egg was found on the floor of the flight. Without very high hopes I constructed a nest of brick on the floor of the flight and covered it with a piece of plywood kept in position with a brick. Inside I made a nest of some hay and put the newly-laid egg in the nest. Contrary to my expectations the nest was accepted and four more eggs laid in it. As far as I could see incubation started about 8th April. On 6th May I observed some egg-shells in front of the nest and on removing the plywood cover saw some white, downy youngsters under the female. I was not able to find out whether all the eggs had hatched as I did not want to disturb the birds unnecessarily. Observation of the birds was not easy as one of the parents, obviously the female, immediately disappeared into the nest when the room was entered. The old birds were not shy in a hysterical way, but were always on the watch for every movement; they had obviously been caught when full grown. When I looked into the nest a fortnight later I saw that all the eggs had hatched and the youngsters were obviously thriving well. As far as I could see they were all the same size and I am under the impression that incubation had started as soon as the eggs were laid or possibly at least most of them. On 6th June I saw three youngsters popping round on the floor when I entered the room, but they all immediately disappeared into the nest. I entered the flight and

removed the cover of the nest and all five youngsters came out and went running round the aviary, trying to fly without success. About a week later, however, they were all sitting on their perches, 6–7 feet high, but for several days they rushed down to the nest whenever the room was entered. After yet another week they remained on their perches or flew from perch to perch and I removed the nest. The family was then moved to the outside flight, the young having first been ringed with aluminium parakeet rings. They are all thriving very well. When they left the nest the young were similar in colour to their parents and are now quite indistinguishable, so I am glad I ringed them in good time.

As to food, the owls have mainly been fed on white mice, rats, and golden hamsters, very occasionally also with chickens, crows (the two last named being cut into suitable pieces), and Budgerigar runners. Fresh ants' eggs were scattered over the food. We breed a lot of hamsters as food for our small owls and birds of prey and they obviously seem to prefer them to other rodents. In my experience Little Owls are considerably easier to keep than many other small species, for instance, Tengmalm's and Passerine Owls. With exactly the same treatment the Tengmalm's Owls are difficult to maintain for any length of time. They seem to thrive quite well for some time but suddenly sit on the ground and are usually dead within a day or two.

I have never seen the Little Owls bathing, even if suitable facilities (at least in my opinion) are always at their disposal. But they seem to enjoy sitting outside in the rain and getting their feathers wet.

As a summary : it seems that the eggs are laid at intervals of one day and that incubation starts when the last or second last egg is laid. Incubation obviously lasts about four weeks. The youngsters leave the nest (in captivity, at least) when about a month old and can fly quite well a week later. After the nestling down there does not seem to be any intermediate colour in their first plumage, but the young immediately attain the colour of the old birds, a fact I have also observed when breeding Eagle-Owls.

I regret that my observations are not more exact, but as this is the first time I have bred this species I would not take any risks as I was anxious to get a complete success with the birds.

*Additional note.*—In the winter 1955–56 I unfortunately lost the old hen and one youngster and no attempts to breed were made by the remaining five birds in the spring of 1956.

## ADVENTURES WITH SOFTBILLS

By J. R. VAN OOSTEN (San Marino, California, U.S.A.)

My adventures with birds started when I was born, but it took me until my fifteenth birthday to realize that fact. My father had always kept a large cage of African finches in the house and these always used to fascinate me. In 1941 we moved to California and, once settled here, he built an aviary which housed common finches and parakeets. Right after the war years we built another aviary, smaller, which would enable us to house our finches separately. Then in 1948 I came across a copy of *Aviculture* and with that my adventures really began. In the issue was an article written by Mr. A. H. Isenberg on the breeding of some Alcippes. I promptly wrote him regarding softbills and where it might be possible to obtain some. His answer put me in contact with another grand gentleman, Mr. Ray Thomas, whom I met and had a chance first-hand to see my first softbills. Through both these men I learned how to keep and take care of these beautiful gems. I owe a great deal to them, for had it not been for their advice and assistance I might never have become interested in birds.

In the early months of 1949, while driving back to Los Angeles, I stopped at a pet shop and purchased my first pair of softbills for the sum of 25 dollars—a pair of White-cheeked Bulbuls. Since that time one might say that I have become a “bird-nut”, for my love for birds grows more with each passing day and at present being only twenty-two I can look forward to many enjoyable years with birds.

Besides the two above aviaries we now have three large ones for the various size softbills—large, medium, and small. The large-size aviary houses Toucans, Magpies, Jays, etc., and is planted with various bushes and small trees and includes an orange tree. It is 18 feet long, 15 feet wide, and 12 feet high with an added shelter on the outside, enclosed except for two windows and the front. The aviary for medium-sized softbills is 36 feet long, 15 feet wide, and 10 feet high with an adjoining shelter 21 feet long, 9 feet wide, and 7 feet high. The shelter is divided into two parts so that food may be placed in two separate places in order to eliminate fights. This aviary contains Jay-Thrushes, Jays, Thrushes, Barbets, Sibias, Starlings, Troupials, etc., and is likewise planted with bushes, small trees, and one orange tree. The last one is our “glass house” aviary for the small birds such as Tanagers, Sugar Birds, Redstarts, Bulbuls, etc. The house is 24 feet long, 12 feet wide, and 8 feet high with an adjoining flight 15 feet long, 12 feet wide, and 9 feet high. Both the house and the flight are planted with small bushes, vines, grasses, and a few small trees. Also in this aviary we built a two-tiered running waterfall which the birds seem to enjoy greatly as it draws many insects and bacteria. All the perches and swings in the three aviaries are dead

tree branches, which I feel helps to simulate natural surroundings as well as making the aviary look more artistic.

To-day one does not read very much about softbills so I decided to write an article for the Magazine, giving some of my experiences with the birds in my collection. It is further hoped that this may spur on other collectors of softbills to write on their birds as they may have witnessed things which would be of interest to other enthusiasts.

The most outstanding event in my collection thus far was my fortunate success in raising two hybrid Mynahs this year. Housed in the "glass house" were a beautiful pair of Grey-headed Mynahs which have been here for three years. While away at college the hen was lost and the cause of death not determined. In the same enclosure were also two pairs and an extra hen Pagoda Mynah which have been here for six years. Early this year the male Grey-headed chose the odd female Pagoda as his mate. I had hopes that the two might breed and sure enough they did two months later. As both these birds are well known to aviculture I see no reason for going into details of their respective descriptions. It might be worth mentioning, however, that the females of both species are easy to sex. I have found that the females are all a shade lighter than the males, and this is especially noticeable if the birds are in the sun or upon close inspection of three or more birds.

The pair settled down and by April had chosen a redwood stained parrakeet nest-box as their nesting site. The only materials used in building were twigs and a few feathers. The material was slanted from the opening down to the back with the eggs being laid in one corner. As I was unable to be home all the time no accurate record was kept. However, four eggs were laid and four young hatched by the middle of June. One youngster disappeared after four days and I suspect that the male Scarlet Cock-of-the-Rock was responsible. Soon after, four days later, another baby was found dead in the nest. The two remaining are now fully feathered and not dependent upon their parents.

The youngsters were fed my formula egg-food mixture, soaked currants, all sorts of fruit—apple, grapes, tomato, pear, banana—milk sop, canned dog food, and Mockingbird food. The only live food which was used was live fruit-flies which I propagate within the aviary by filling half-way a 5-lb. lard can with fruit rinds. I find that there is no odour and hundreds of live flies, which all the birds love, are produced.

Both youngsters show very little colour beyond grey. The wings, back, rump, and tail are a deep powder grey. Head, neck, chest, belly, and vent are a very light powder grey, in which they resemble their father. The bill, feet, and eyes are also the same as their father's. There seem to be some black feathers coming on the crest of the

head, as in the Pagoda, but only the next moult will show for sure. Beyond this they show none of the colour or other characteristics of their mother. Their size is between the two, but this may change when they reach maturity. Needless to say, sexing is not yet possible although one seems a little brighter than the other. They have at present all the antics of their father as they are always chirruping and running around in a never-ending search for bugs. I will write further on these two birds after they pass their first moult.

Another unique nesting took place in the "glass house" by a pair of Pope Cardinals which each year for the last four years have maintained two nests at the same time. Both birds have been seen entering the nests and at times neither one was seen, and upon my entering the "glass house" each would come out of a nest. They nested twice each year, during the spring and summer, and as yet have never reared a young one. This is due to the lack of mealworms, which are only fed during the winter months. They have never been observed catching or eating fruit-flies so this no doubt is where the trouble comes in. Unfortunately, I am not home so am unable to feed the live food required; however, I feel that both broods could be reared if the live food were supplied. There are always four eggs in each nest and four youngsters hatch.

About two years ago my male White-checked Bulbul died of old age. The pair had been very devoted to each other, but as soon as the male was gone the hen promptly killed my female White-eared Bulbul and mated with the male. They had one nest each year, but the youngsters just vanished into thin air. They built the nests in a canary-type outside cage-nest. The nest was covered with palm leaves on the sides and the top, leaving the front open. The nests were constructed of dried grasses, twigs, and feathers, and lined with string and cotton. Two eggs were always laid and the hen sat close at all times; she was fed by the male. This year no nest was built as the hen is rather old and cannot fly very well although she is in perfect condition. The White-eared male is a most devoted husband and sits with her most of the day and preens her feathers. He also hawks fruit-flies which he feeds her, as he seems to know that she is unable to fly very well.

In the summer of 1954 while sitting in the aviary taking notes, all of a sudden I found the cause of the disappearing Bulbul youngsters. Hovering outside the nest like a Humming Bird the Scarlet Cock-of-the-Rock reached in with his beak and took one of the young. He then flew to a perch where he struck it a few times and then swallowed it whole. Needless to say, the babies were not more than a few days old. Had I not seen it then and again on other occasions I would never have believed it. The guilty party was believed to be a male Orange-headed Ground Thrush. Because of lack of space I was unable



to remove the bird and was therefore unable to raise any young. These young could have proved to be a very interesting hybrid but unfortunately I shall never know.

Also within this aviary are housed a pair of Button Quail, and after two nests, young all reared, the babies began to disappear. I feel certain that the same bird is responsible; however, he never bothers the White-eyes or Yuhinas which sleep near him at night. Mrs. Erlanger some years ago had babies from Cocks-of-the-Rock and she fed them baby mice. It is very possible that breeding these lovely birds might be achieved by feeding some of the larger live food, such as baby mice and rats.

Another attempted nesting took place this summer but met with failure. The pair consisted of a male Orange-headed Ground Thrush and a female White-throated Ground Thrush, both birds had been imported from India in 1950. Up till two years ago I only suspected the sex, but I could not be sure. The female Orange-headed had to be placed in the medium-sized softbill aviary for fear that the male would kill her. However, the White-throated was left in as he took no notice of her. The male was much deeper in colour than the female and was heard singing on a few occasions. This year there was no doubt that they were a pair as one egg was laid and sat on for five days before it was broken. During this time the male was never more than 5 feet away from the nest and any bird coming too close was at once chased off. I have found these birds to be very nervous and no doubt this caused the failure because if anyone came to the aviary the female would leave the nest. The nest was built 4 feet off the ground in the right-hand front corner of the aviary in a small, but thick, spruce tree. The tree was right behind the waterfall and could not be seen from outside the aviary even though the nest was 2 feet from the wire. The nest itself reminded one strongly of a dove's nest, although it had a sort of a mud plaster holding the bottom together. Upon closer inspection I noticed that twigs had been laid between two branches, then some twigs placed in the opposite direction and covered with mud. The nest was roughly lined with grass and a few leaves. No further attempt was made by these birds, although both were seen carrying twigs on several occasions.

I have found that both these birds are very friendly towards other birds. At present there is an English Robin in with them and they take no notice of him. Also a pair of White-capped Redstarts had been kept in the same cage and not once had the Ground Thrushes been seen chasing them or even paying them any heed. This also holds true for a female Rainbow Bunting that always seems to get the fruit-fly just at the moment the Orange-headed is reaching for it. Also at one time a Shama Thrush had been in the same aviary with the same good results. One day by accident my father turned loose

a male Kashmir Blue Thrush and the Ground Thrushes wasted no time in trying to get a hold of him and do him in. He was taken out before any harm could come of it.

Next number I will relate an almost successful attempt by a pair of Black-chinned Yuhinas to rear some young, and of some of the other birds which are housed in my collection. I will tell how my birds have been fed, which I feel has attributed to some of my very good fortune. And last I will give descriptions of some birds which have been imported from South America but about which I can find no mention in books or the back issues of this Magazine.

*(To be continued)*

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## BREEDING LOVEBIRDS IN CALIFORNIA

By KENNETH A. WYATT (Torrance, California, U.S.A.)

Having read in your Magazine of the difficulty in raising lovebirds in England, I would like to write about the very good luck I have had in breeding them. In December, 1955, I finished an aviary 20 feet long, 10 feet high, and 8 feet wide. By March, 1956, I had acquired four pairs of Peach-faced, two pairs of Masked, and three pairs of Fischer's, and put them all into this one big aviary. With plenty of nest-boxes I had very little, if any, fighting, and have not bred a hybrid in the aviary. On 1st September, 1956, I took the boxes down for a three-month rest, and at that date had reared forty-one lovebirds, twenty-four Peach-faced, four blue Masked, seven Masked, and six Fischer's.

I got a little impatient and put the nest-boxes in early, and to-day (6th January, 1957) I have seven baby Fischer's flying along with two blue Masked the Fischer's reared with their own. In the nest I have three Masked, three blue Masked, and two Peach-faced two weeks old. Also two nests of Peach-faced, five eggs in each box, all fertile, due to hatch any day, also one other pair of blue Masked due to hatch in about a week. The only trouble I have had is when the young come out of the nest the Peach-faced like to bite the youngsters' feet causing them much trouble but not injuring them.

The winter here in southern California has been very mild, many days being in the 80's and nights in the 50's, with only about two rainy days in December and January so far. In this wonderful climate the raising of these lovebirds is not rare or out of the ordinary, for many of my friends have done as well and some better, and I take none of the credit. The birds just love it here and will fill one's

aviary if one just gives them a little care. Other than millet and sunflower seed I give them soaked bread, pyracantha berries, corn on the cob, apple, grass seeds of all kinds, and lots of lettuce and dandelion.

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## BREEDING HYBRID BROWN'S × YELLOW ROSELLAS IN CALIFORNIA

By DAVID M. WEST (Montebello, Calif., U.S.A.)

Last year one of the more interesting breeding successes was the rearing of four young hybrid Brown's × Yellow Rosella (*P. flaveolus*).

Last fall I finally despaired of obtaining proper mates for the male Brown's and the female Yellow Rosella, so it was decided to put the two birds together and attempt to produce some hybrids. From the very first minute of introduction the two birds agreed, despite the difference in size between the smaller Brown's Rosella and the larger female Yellow Rosella. Formerly, when paired to a female Brown's, the cock was quite given to driving his mate about, but he did not continue this practice with the Yellow Rosella hen. Apparently her greater size impressed him, and he made his advances to her with the greatest of care.

During March the pair were frequently seen feeding and the cock Brown's displayed to his mate almost every morning. Two large nest-boxes were put up about the middle of March and the pair were often seen visiting the boxes after this. By April it was apparent that the hen was most seriously interested in the smaller of the two boxes, and much of the sawdust and wood chips were being ejected by her. In late April the pair were observed mating, and shortly after that the hen disappeared into the box.

No investigation was made during incubation ; as the hen would always tumble back into the box upon seeing anyone approaching. The first opportunity to investigate the contents of the nest-box was on 16th May, when the temperature was well over 100 degrees and the hen was off the box. The nest was observed to contain four nice youngsters that were probably just five or six days old, and very closely intertwined.

During the period the young were in the box both parents fed them, and the male was frequently observed to enter the box to do his fair share. The usual grains, fruit, and extras in the form of greens were given and both parents spent large amounts of time caring for the growing family.

The first two youngsters left the nest when about five weeks old.

They were excellent fliers and very steady. The second two youngsters left the nest two days later, and they too were steady and quite tame. Before the second two left the nest the mother had laid again, and is now incubating.

As this cross has not, apparently, been achieved before, a short description of the youngsters may be of interest. They are best described as almost completely resembling their mother—being quite identical in coloration with her save for the fact that they have pale orange under tail-coverts where the true Yellow Rosella has pale yellow under tail-coverts. There are also a few pale orange feathers on their breasts—but otherwise they are closely akin to young Yellow Rosellas. This similarity to the mother is rather surprising, for I had rather thought that they would resemble a combination of the two parents which are quite different from each other. Still, crosses between the widely different Pennant's  $\times$  Barnard's result in young that are so nearly pure Barnard's in appearance that only an expert would be able to tell the difference.

Eventually I anticipate breeding the young male hybrids back to their Yellow Rosella mother, and see if the resultant young are not good enough to try and re-establish the Yellow Rosella in my collection for new imports are out of the question, and the Yellow Rosella is very scarce in the U.S.A.

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## THE STORY OF A BLUE CROSSOPTILON

By SYDNEY PORTER (Derby, England)

“Emma” should not have been at all! “He” and his sister were a kind of baksheesh, as my own life has become after being saved by the drug “Cortisone”. Towards the end of a very long illness, my kind friend Fred Logan (who came to my rescue when the person who was looking after my collection suddenly disappeared, with the result of the loss of nearly half the birds) set a quantity of pheasant eggs. These all duly hatched, were reared, and most of them given to friends. However, there were five eggs left over, we did not know of what species they were or how old. Mr. Logan went to a good deal of trouble, as it was then late in the season to get a broody bantam. At that time I was well enough to do a few chores connected with the birds and one was to see after the bantam hen.

The chicks from the first lot of eggs were now quite large. From their earliest chickenhood, with the aid of the gardener, we moved their pens to fresh ground every day . . . but, Oh! . . . the damage the young Crossoptilons did to my nice smooth lawns! In fact they have not recovered yet.

Crossoptilons, being mainly root feeders, dig for their living, and how those chicks dug ! At the end of each day there were dozens of holes in the sward into each of which one could put a tennis ball.

Every evening the bantam was taken off the eggs, but she was in such a state of broodiness that she used to rush back on to them as soon as she was lifted off. To stop this the grille in front of the coop was placed back until she had finished feeding.

One day the housekeeper came to say that there was a long-distance call on the telephone. Now the aviaries are at the bottom end of a small orchard and quite a distance from the house. By the time I had heard most of the "birdy" gossip from London the hen and the eggs had been clean forgotten. Next day, about 6 p.m., the hen was seen sitting disconsolately before the grille and the eggs stone cold after twenty-four hours' exposure on a rather cold day and night. Not wanting anyone to realize what a fool I had been, I decided to let the hen sit out the allotted span and then throw the eggs away, saying they must have been stale and had not germinated.

Ten days *after* the normal incubation period I thought it would be better to smash one of the eggs to see if they really were bad. The egg was flung with much force on to the hard gravel, but nothing happened. The process was then repeated with much more vigour, this time the shell cracked and blood poured out and a faint cheeping was heard ; on picking up the damaged egg a tiny beak was seen apparently gasping its last. Believing in the old adage "while there's life there's hope", the much-damaged egg was put back under the hen. The next day the shell had disappeared and running about at lightning speed was a beautiful little Crossoptilon chick. I believe the Chinese name "Manchee" means the bird that can run faster than a horse. I can guarantee that no one on foot could ever be able to overtake one of these birds.

The next day another little chick was seen, but alas, just as the grille was being lowered between the coop and the run it shot out from under the hen into the run, the grille fell on the bird's neck and after a few convulsive struggles the tiny body flopped over, became limp, and appeared to breathe its last. Being in a hurry I left the body until later in the day, but when I came to the birds again it wasn't there and the next day two very lively chicks were seen running about the pen. They flourished exceedingly, until they were too big for the run and were then put with their older brothers and sisters, who chivvied them around with their mock fights and kept them from the food dishes.

The two poor twins started to grow listless and mope, they became dejected and ill so, having nowhere to put them, I set them free in the orchard. At first they hung about the birdroom, looking for scraps of food and odd mealworms which managed to get out of the breeding box. In the course of time they grew much better, due to feeding on

all manner of things, grass in particular, and, to my sorrow, rare bulb species which they dug out of the rockeries. Gradually the menu was extended to include all manner of things, raspberries, alpine strawberries (*Frais du bois*), insects; they played havoc with the lettuce bed in the kitchen garden, and all the time they dug everywhere, but mealworms proved the factor which rendered them tamer than domestic poultry. Used properly, mealworms will tame almost any bird. The larger of the two we called "Emma", in remembrance of a female given to me many years ago by Mr. Delacour, a bird of great character. However, "Emma" turned out to be a male and his mate a female. The latter was always shyer than her brother, in fact when first let out she was very wild and, indeed, I often thought she would fly away, in fact she once did, but we got her back again. It is useless to pinion these birds when chicks, for besides their swiftness they are remarkable for their jumping propensities, they can easily leap on to a 8 or 9 ft. fence or shed. And it's next to impossible to catch a Crossoptilon when once thoroughly frightened unless it is cornered, and it is never wise to handle them, for no bird loses its feathers so quickly. When one of these birds has lost its confidence in humans only complete incarceration will keep it from flying or running away.

For a long time after the male became so tame the female stayed in the background. "Emma" always thought of me as another Crossoptilon and, in the manner of his species, he talked to me all the time I was around. A better scientific name for the species would be *C. garrulax*! All the time these birds are together they hold long conversations with each other. Beebe mentions this in his study of the birds in their native state. In time I learned quite a bit of their language and what a rather loud, snake-like hiss, which is very seldom heard in captivity, means, which is "I am not annoyed but I don't like what you are doing". The pair would go every day to their parents' aviary and spend many hours conversing with them. "Emma" seems to have a great aversion to the glass vessels which are used for the nectar-feeding birds, these he will take up when they are being collected or being washed and will deliberately break them one by one. Why he does this I can never make out.

He would jump on to my knee if I was sitting down and let me handle any part of him, but he usually hissed when I touched his tail, though he did not move away. The tail of the Blue Crossoptilon is remarkable in that it is composed of twenty-four feathers, which is more than that of most other birds except the Bulwer's Pheasant. The central feathers are from 18 to 24 inches long and the ends curve downwards, the webs are very disintegrated and are like long fine hairs and in old birds are 8 to 10 inches long and when used in the plumage trade are known as "glycerined ostrich feathers". The outer tail feathers are normal, the lower half being white and the end half being iridescent

steel-blue. The outer and middle tail feathers gradually integrate one with another, in a manner difficult to explain.

One unfortunate thing about the Crossoptilons is that they are very prone to feather biting, not of their own plumage but that of their mates. As they usually roost together, head to tail, they indulge in a kind of feather-biting competition, which soon renders their nether regions a very unsightly mess. I keep the hen separate from the cock, except during the breeding season, this seems to be the only way of keeping their plumage perfect.

On the whole the birds are very good tempered, except with other species of pheasants, which they will immediately start to kill. Even if one catches the victim in time the aggressors will continue their attacks by jumping up and pecking it when one is carrying it out of the aviary. With all other species I have found them perfectly safe, though they will not stand any interference from any bird. One pair share an aviary with a pair of Choughs and when these were first placed with the Crossoptilons they commenced, in the usual crow-like way, to tease and play jokes on their companions; they very soon put the Choughs in their place and woe betide them if they ever try any tricks these days.

Strange to say, these two species are also companions in the high and remote regions which is their native habitat, at from 10,000 to 16,000 feet. Amongst themselves they are very peaceful, except when young they indulge in a great deal of mock fighting, perhaps more so than any other pheasant, but when they have got rid of their youthful inhibitions no bird could be less aggressive; in a wild state they are highly gregarious.

Feather biting is even worse in the Brown species and one rarely sees one of these birds whose feathers are not completely ruined by this unfortunate habit. Of course, if one has a big enough estate the best thing is to have them loose, like domestic fowls; they will stay around the house, but are apt on occasions to wander, though if left alone they always come back, but the sight of so strange a bird as a Crossoptilon is sure to cause a hue and cry and the poor bird is so chivvied and chased by both humans and dogs that it loses its sense of direction as in the end it is chased further and further away from its home.

Another thing, with keeping the birds at liberty they are certainly not a gardener's friend and, leaving rare bulbs, etc., aside, they are apt to think that one's kitchen garden produce is grown solely for them and, in the end, one has to resort to the local greengrocer for one's vegetables. If one does not mind all this, one will have delightfully tame and intelligent pets which are also feather perfect, and a feather perfect and tame Crossoptilon is a very beautiful creature.

It seems a pity that these extremely interesting birds, which look like meeting with extinction in the near future (in fact, the Brown species

is thought to have become almost extinct through killing and deforestation in its native haunts on the mountains of Shansi and Chihli, in North-western China) are not more widely kept and bred, for no birds are easier to rear than these. One wonders what will happen to the genus *Crossoptilon* now that Tibet, Szechuan, Yunnan, Shansi, Kokonor, and Kansu, the home of these birds, have been "liberated", as the Communists call their occupation, from the domination of Buddhism, a gentle and enlightened religion which teaches the sanctity of all life. One wonders too, what will happen to the other splendid pheasants, of which we know so little, which inhabit those lofty regions, the Chinese and Sclater's Monal's (I consider myself very lucky to have seen living specimens of the former, one of the most magnificent of pheasants, when in China in 1936, being one of the very few Europeans to have done so. These birds were later shipped to Europe but died *en route*), the Tragopans, the Koklass, and the uniquely coloured Blood Pheasants (of which it seems less than ten individuals have ever reached Europe and of which thirteen sub-species are known), not to mention various other species.

After reading the late Hachisuka's recently published book on the extinct birds of the Mascarene Islands, in which we read "no other part of the world . . . contained such an extraordinary avifauna . . . and nowhere was the destruction more rapid or complete" one contemplates on the question, if Buddhists had discovered these fair islands would we not have with us to-day all those many and fantastic forms of avian life, which were so swiftly swept to oblivion after the discovery and occupation by the Portuguese, Dutch, French, and English, and which for untold æons of time had known no enemies until so-called Christian Man came on the scene. Forty-seven species were exterminated, including a huge 6 ft. high, white and red water-hen, the giant black Ground Parrots and, amongst others, the very Dodo itself. There may have been other species, we shall never know, for all we have to tell us of those exterminated are an odd stuffed specimen or two, a few bones and skeletons, notes in ancient manuscripts, or mention in some aged tomes on travel written by those who visited those far distant isles, the reading of which leaves the bird-loving ornithologist sick at heart at the sadistic ways of mankind. Sad to say, the same story is being enacted all over the world to-day, in spite of the endeavours of those who try to preserve our great heritage.

To get back to *Crossoptilons*, when in California a few years ago I saw hybrids between the White and Blue species. In shape they were exactly like the Blue, which is different to that of the White. These birds were most beautiful and attractive, being of a pale lavender blue. I do not know if any of them are left as I understand that Mr. Gibson, on whose ranch I saw them, has disposed of all his vast collection of birds. As mentioned before, it is not known if the Brown *Crossoptilon*



still exists in its natural habitat, which was the western mountain ranges of Shansi and Chilli, in China, most parts of which have become practically desert regions with the continual deforestation and subsequent erosion. It seems to have been introduced into Europe nearly a hundred years ago and since then few wild specimens have reached us. The breed is therefore very inbred, which accounts for the low fertility of the eggs. To save this bird it seems that it will be necessary to cross it with the Blue to ensure fresh and stronger blood and then breed back again to the pure Brown. Though a free breeder when it first arrived here, it is becoming very much rarer in captivity owing to the cause mentioned above and everything should be done to save the species while there is yet time.

As to the White Crossoptilons, very few Europeans have ever seen these in their native haunts, as they live in probably the most inaccessible and remote parts of the world and which, no doubt, will always remain so owing to the difficulty of any transport ever reaching there. Their habitat is in the high Eastern Himalayas, in that part of the world where Tibet, Burma, and China meet. We are told they range from 10,000 to 16,000 feet and upwards. The existence of these birds has been perpetuated by the influence of the kindly Buddhist monks, whose lamastries are situated in those lofty and distant regions. I was fortunate enough to see some of these wonderful birds whilst in California, where a few were sent in 1936. Unfortunately they are not prolific like their congenitors and very few are bred. These lovely birds are snow-white, their immaculate plumage being set off by the scarlet face and legs and the brilliant, iridescent, purple-blue tail feathers. The story of how the first Blue Crossoptilons were procured in 1929 and of how they were first carried in baskets by coolies, then on the backs of donkeys, and finally by river boat during a journey of over six months' duration from Kansu, in the far interior of China, several thousand miles to Shanghai, is told by Herr Hampe and quoted by Mr. Jean Delacour in his fine book *The Pheasants of the World*, and makes fascinating reading.

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## BLUE RINGNECK PARRAKEETS AND A “PIED” RINGNECK

By EDWARD J. BOOSEY (Keston, Kent, England)

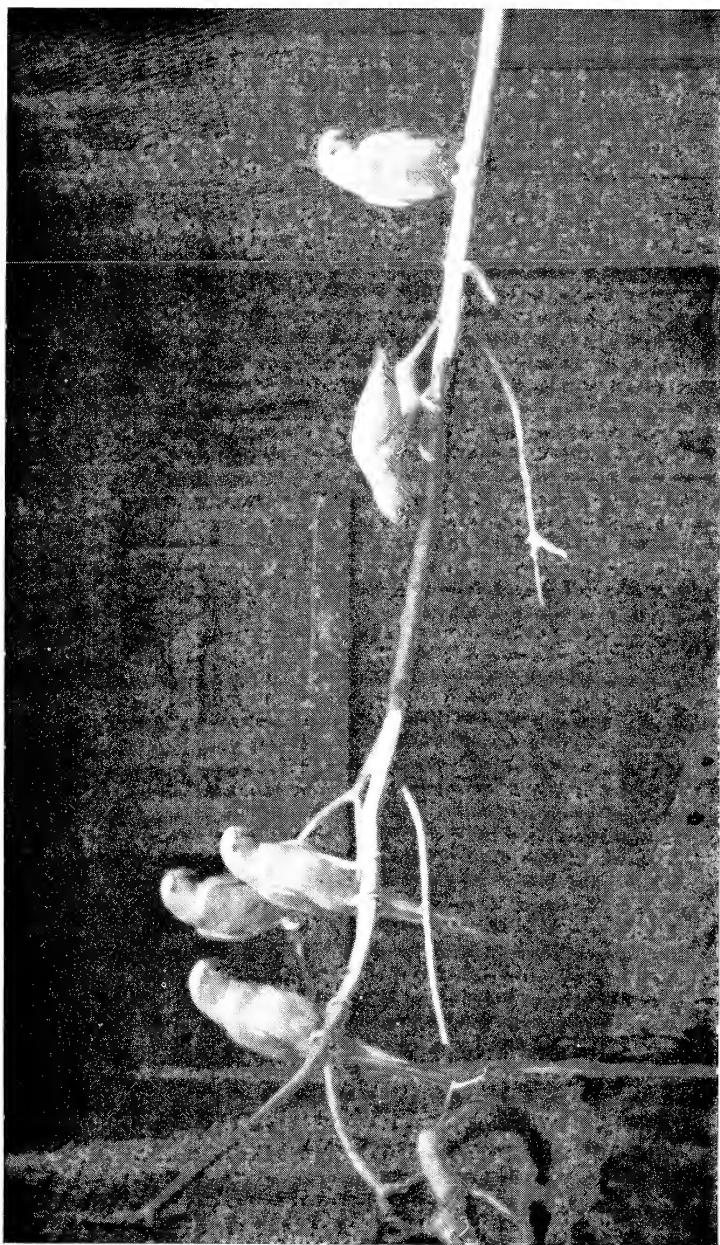
I thought the accompanying photograph of the brood of five young Blue Ringneck Parrakeets bred here at the Keston Foreign Bird Farm during the 1956 season might be of interest. They are the progeny of the late Duke of Bedford's famous original breeding pair of these birds, which came to Keston on his death and have since reared ten young ones in all—one in 1954; four in 1955; and five in 1956. Incidentally, their latest brood is, in my experience, just one more than Ringnecks generally produce—their broods usually consisting of threes and fours.

When one takes into consideration the fact that they had already reared numerous young ones at Woburn before they came to us, it will be seen that, in sharp and refreshing contrast to most rare and beautiful colour “sports” they are a truly wonderful breeding pair, even judged by normal standards. Nor is this the only respect in which they are remarkable, for the attitude of the sexes one to the other is in their case reversed. Usually, of course, with Ringnecks, it is the hen who “wears the trousers” and is often very snappy and short-tempered with the cock, except when she is actually in breeding condition.

With these two, however, the position is exactly the opposite, the cock being at all times the master and lunging at his wife should she attempt to sit too close to him, and I have even seen him do this during the breeding season, though a few moments before he had been feeding her as she put her head out of the nest-box. It may be remembered that the late Duke referred to him as a bird of funny and uncertain temper and thought he might eventually need careful watching with his newly fledged family, although I must say I have always found him entirely exemplary in this respect and a model parent in every way. Altogether he adopts a typically mid-Victorian attitude towards his wife, but in extenuation it must be said that the number of their offspring is comparatively quite up to mid-Victorian standards, too!

I only wish the accompanying photograph could be in colour, and for those who may never have seen a Blue Ringneck I would add that they are extremely beautiful birds of a soft yet rich shade of powder blue which, in the cock, is particularly vivid on the crown and forehead and which makes a lovely colour contrast to the coral red of the bill.

While on the subject of Ringnecks, I think a short account of a very unusual and colourful Ringneck “sport” we have might be of interest, as it is the only one of its kind I have ever seen. It was discovered in one of the London bird shops by our General Manager,



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To face p. 58

[Alice Brookbank

YOUNG BLUE RINGNECK PARRAKEETS.



[P. Talbot-Ponsonby

MAGPIE GOSLING AT 3 DAYS.

Mr. Cummings, and I would call it a pied Ringneck, as its appearance is somewhat reminiscent of a green and yellow pied or harlequin Budgerigar.

It is not an easy bird to describe but I hope the following may give, anyway, a rough idea of its general appearance. It is a cock and is in every other respect a normal green, except for the large areas of bright yellow in its plumage and the fact that the two central tail feathers are particularly blue, being only faintly tinged with green, while the outer ones are mainly yellow. The usual black and pink neck-rings are present, as is the area of bluish-mauve at the back of the head, but on the head itself there is some yellow in the region of the forehead. The mantle and the flight feathers are pure bright yellow, while the upper breast is yellow of a rather paler shade merging into green on the lower breast and belly.

It is a great pity that, with the Ringneck family, the breeding of colour varieties is such a very long-winded process, but I suppose the eventual hopes from this bird would be that, about a decade hence, it might be the ancestor of evenly marked piers and normal-eyed yellows—as opposed to pink-eyed lutinos. I only wish the present state of the world was stable enough to allow one to hope that such long-term projects had a reasonable prospect of eventual fruition.

Unlike in the days of my youth—planning ahead seems, nowadays, the essence of folly—nevertheless, I cheerfully go on doing it!

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## THE 1956 BREEDING SEASON AT THE WILDFOWL TRUST

By S. T. JOHNSTONE (Slimbridge, Glos., England)

During the past spring and summer the weather can, with justification, be blamed for considerable losses amongst our young birds. Continuous rain and cold in June and July caused havoc, particularly with the ducklings. One recalls two heart breaking weeks in June when over a hundred babies were lost from chilling and allied troubles. Nevertheless, it was a pleasant surprise when figures were assessed at the end of the season to find that we had had our best breeding season in the ten years that the Trust has been established. The figures are as follows :—

<i>No. of species breeding.</i>	<i>No. of kinds reared.</i>	<i>No. of cygnets.</i>	<i>No. of goslings.</i>	<i>No. of ducklings.</i>	<i>Total.</i>
86	67	5	171	326	502

We have had our most successful season with the Hawaiian Geese. Sixty-two eggs were laid, of which twenty-two were fertile. Of the

sixteen that hatched fifteen were reared, and a further three were reared from a pair under the care of Mr. Terry Jones, at Leckford.

Cuban Whistling Duck (*Dendrocygna arborea*), Wandering Whistling Duck (*Dendrocygna arcuata arcuata*), Magpie Goose (*Anseranas semipalmata*), Bewick's Swan (*Cygnus columbianus bewickii*), Lesser Scaup (*Aythya affinis*), Comb Duck (*Sarkidiornis melanotos*) and the South American Comb Duck (*Sarkidiornis melanotos carunculatus*), Common Golden-eye (*Bucephala clangula clangula*), Goosander (*Mergus merganser merganser*), were reared for the first time at Slimbridge, indeed, the last seven kinds, we believe, for the first time in England.

Some notes on the Bewick's swans have already been given. Of the rest, by far the most interesting is the breeding of the Magpie Goose. We have in our collection a pair imported from Sydney in 1949 and an old female which has been in this country since pre-war days. They are kept in our Wood pen along with a pair of Black Swans, Whistling Ducks, and Muscovys. There is a 4 ft. privet hedge bounding the pen on one side and it was in this that in 1955 a male was found to be making the rudiments of a nest. The activity was soon abandoned and when a similar occurrence took place this year we were not unduly elated. However, some days later the old female joined the male in building a second nest on the ground, some two or three yards from the original site, composed of twigs, straw, and nettles, very like that of a swan in design. In the course of the next four weeks a further five nests were built in the nettles at the back of the pen and during the last week the female was seen to be getting very heavy. On 15th August she was sitting on the latest nest. When approached she emitted a high-pitched scream and the male came striding to her assistance. Both birds stood on the nest with tails in the air, heads lowered, and wings outspread and one could see the first roundish white egg had been laid. During the next twelve days a further seven eggs were laid. They had roughish shells and were dead white in colour. The average size being  $73 \times 56$  mm. and weight 115–3 gm. As the eggs were laid they were replaced by dummies and when the clutch was completed two real eggs were left in the nest for a few days after incubation commenced. It was found that both birds shared in the sitting and that the eggs were never left. The two eggs were removed and added to those that had been placed under the broody bantam. For the rest of the incubation period, when the broodies were being fed and exercised, the eggs were kept warm by use of a spare bantam. An incubation period of around thirty-five days was expected and it was with some surprise that we found the first egg chipped after twenty-seven days. Five goslings hatched on the 28th day, the other three eggs being infertile.

The downy young are striking little things, quite unlike those of any other of the Anatidæ. The head and neck are a cinnamon red, reminiscent of the male Red-crested Pochard. The body is a dark

grey above, with an absence of barring, and the under parts a pale grey. The bill, yellow in colour, is large and powerful, the nail being particularly prominent, and the lores are bare. The toes are very large in proportion to the rest of the gosling and the yellow tarsus is very sturdy. These babies were very aggressive to each other and had great pecking matches as soon as they were able to stand. The diet consisted of soaked biscuit-meal with a 25 per cent protein content, plentiful supplies of duckweed, chopped plantain, grass, and lettuce. They were given quantities of fresh-water shrimps and these they preferred to all else. When food was given to them they would emit a high-pitched sibilant call, similar to that of passerine nestlings at the approach of the parent bird. Feathering commenced at twenty-five days and at the same time the bill began to turn black. The down was lost completely at six weeks and the adolescent plumage was a black head and neck, mantle, and upper parts, except for a white rump, with the under parts and breast shaded from pale grey to white. The eyes do not as yet give the impression of being so far round on to the frontal aspect of the head as in the parent birds and one is not conscious of their use of binocular vision as in the adults. The forehead is not yet bare and the characteristic bump not yet developed.

A South American Comb Duck bred at New Grounds in 1955 but lost its brood within two days. In 1956 three South American Comb Duck and one of the Old World race nested. In each case the eggs were laid in little grape barrels that had been sited some two or three feet above the ground in willow trees. The incubation period was thirty-one days for both forms. The creamy white eggs had a thin, shiny shell and the average size for twenty-five specimens was  $57 \times 37$  mm. and average weight 44 gm.

The ducklings are obviously near relations of the Muscovy as regards shape and dual colouring of the tarsus. The downy pattern was cap, back of the neck, and upper parts of the body brown, the wings and body being barred with yellow. There was a brown eye-stripe and the throat, breast, and under parts were yellow.

The first hatching did not thrive at all and showed little inclination to feed. They soon succumbed in the cold, wet weather. The use of infra-red lamps had a very favourable effect on subsequent broods. The ducklings showed great interest in life, ate well and, apart from one or two weaklings, grew rapidly.

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## BREEDING THE SENEGAL PARROT

*(Poicephalus senegalus)*

By GERNER PETERSEN (Glostrup, Denmark)

(Reprinted, by kind permission, from *Stuekultur*, March and April nos., 1956. Translated by Paul Hansen.)

In December, 1951, I bought two Senegal Parrots, which later turned out to be two cocks ; one died in September, 1953, but the following day I was lucky enough to be able to buy a female. When I placed it with the cock they immediately showed great interest, and were very pleased with each other.

In the summer of 1954 the pair was placed in an outside aviary with a nest-box, which seemed to interest them but, apparently on account of too much disturbance from the other birds in the aviary, they did not show any signs of breeding.

In spring, 1955, we tried again, this time indoors (in my bedroom, which faces north), in a parrot cage measuring 44 cm. by 44 cm. with a height of 60 cm., and with a nest-box measuring 25 cm. by 25 cm. and 35 cm. in height placed outside on the cage, which was put against a warm chimney. On the 17th March the first egg appeared and, with a day between each, in all four were laid ; one of them, however, was destroyed. On the 15th April the first sounds of young were heard from the nest-box, and examination showed two youngsters, but one died on the 20th April and the other on the 27th.

In the summer of 1955 I tried again in the garden aviary, also without any results on account of disturbances. In October, 1955, the birds again were placed indoors in the parrot cage with the nest-box on the outside. The birds were mating and were apparently in very fine condition. The first egg was laid on the 2nd January, 1956, and three in all appeared.

During the whole period of incubation both the parents spent the time in the nest, only one at the time coming out for feeding.

The 27th January sounds were heard from two youngsters ; one of them, however, died on the 2nd February, though the other was thriving very well.

As soon as the hen left the nest, which at first she only did in order to relieve herself, the youngster kept up a continual noise until she came back. During the first four weeks the cock was feeding both the young and the hen. The young had quite white down.

As rearing food I used sprouted seed in a mixture of sunflower seed, hemp, canary, white and golden millet, and dry seed in the same mixture ; in addition, plenty of millet sprays, hard-boiled egg, and apples. In the bottom of the nest-box was placed 3 cm. of damp peat-moss.





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SENEGAL PARROTS AND YOUNG IN CAGE.



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[Mortensen

YOUNG SENEGAL PARROT.



When the youngster was five weeks old the feathers started to grow, first on the head, afterwards on the wings and the tail, and lastly on the body. The eyes were very dark, but at approximately ten weeks the yellow rings started to show very faintly, but at the time of writing (April, 1956) are not yet very colourful.

The first feathers were very dull in colour, but when the young left the nest, at nine weeks old, it was fully feathered and the colours most beautiful and clear like the colours of the parents. Before it left the nest the parents had been calling for it for some time, enticing it to take the great step out in the world, but it never went further than looking out of the nest-hole, and here it was fed. It was very early in the morning on the 30th March when it finally came out ; at first it was very unsteady on the feet, but the unsteadiness very soon left it altogether. Gradually the hen seemed less and less interested in the young, leaving the cock to do all the feeding, at which he was very good. Since ten weeks old it has been feeding for itself, occasionally still begging a little from the cock.

The youngster, which is a little bigger than its parents, with a comparatively smaller head and beak, looks very promising, is sound and in fine condition, and starts every day with a good bath in the bird-bath attached to the cage. I have had it in my hand a couple of times ; it is very quiet and does not try to bite.

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## BREEDING THE CRIMSON-WINGED PARRAKEET IN CALIFORNIA IN 1956

By DAVID M. WEST (Montebello, California, U.S.A.)

This lovely Australian psittacine has never been too easy to breed here in California. The result is that they have always been scarce, and the breeding records not too numerous.

In recent years the San Diego Zoo has had several successful breedings, but in private collections the only recent result that comes to mind is that of G. Rayson Brown's 1955 success with two young reared.

My own two pairs have had a four-year record of every possible vagary. They have laid every year, but sometimes they refused to incubate, other times have laid from the perch, smashed the eggs, deserted them, etc. It was, therefore, without much optimism that I greeted the current breeding season.

This season (1956) both pairs appear to have turned over a new leaf. To be sure both males continued driving and heckling their mates, but every now and again they would stop long enough to feed them ! The hens, apparently anxious to justify their long non-

productive sojourn in the collection, responded by beginning actual nesting operations six weeks earlier than in any former year. By 2nd March both hens had disappeared from sight, and sat very steadily until 24th March when young could be plainly heard. As the nest-boxes were placed very high, and a small ladder would have been needed to make an inspection, none was made. The usual grandfather-clock nest was used, the bottom being filled with wood chips and sawdust.

From the time the youngsters hatched until they emerged from the nest, some five weeks later, the parents were perfect in every way and gave me no worry whatsoever. Large amounts of food were consumed, and during the first few weeks I was regularly carrying in three bucket-fuls of *poa annua* to each pair daily. In addition, each pair were fed canned corn that had been washed and rinsed in clear water before being given to the parents. Of this they were terribly fond, and each pair ate a small can of it daily. Both males fed their respective hens assiduously, and after about two weeks the hens began to spend longer periods away from the young. The males were only very rarely seen actually to enter the box, and then rather hesitantly.

The first youngster appeared on about the thirty-fifth day and looked smaller and duller than the mother. The others followed within a few days, and were active and good flyers from the first. Some of the youngsters have more red on the wing than others, but this is apparently not a good or valid indication of sex. One of the adult hens has much more red on the wing than the other hen.

The male parents have proved to be very tolerant of their offspring, and have not driven them about. This is in contrast to some other species, as the Red-rump for example; which will sometimes attack the youngsters if a second nest is planned.

The aviary of the first pair was 18 feet long, 3 feet wide, and 9 feet high. The second pair were in an aviary about 24 feet long, 3 feet wide, and 9 feet high. Both nest-boxes were hung under shelters, and were filled with rough wood chips. In addition to the usual dry seed mixture, seed was thrown on the dirt floors to sprout, and soft food such as soaked bread, oats, etc., was also provided. Naturally, large amounts of greens were provided, and fruit, such as orange, apple, and fresh corn on the cob also provided, and relished.

I am very pleased to report this success, because Crimson-wings are a little difficult to rear, and it has given me a great deal of pleasure to be fortunate enough to rear some this year after four years of negative results.

The first pair reared two, and the second pair reared two more. Both pairs nested a second time—but one pair deserted their nest during a heat wave in May. The other pair successfully reared two more—thus making a total of six reared for the year.

# A FEEDING METHOD FOR BREEDING FINCHES

By HYLTON BLYTHE (Thorpe Bay, Essex, England)

For some years I have realized that breeding pairs of finches, both British and foreign need more nutrition than is available in hard seed. If necessary proteins and vitamins are absent in the spring diet the eggs will be too poor in quality to sustain life until the chicks can be fed by the parent birds, resulting in "dead in shell". Then, if the regurgitated food is lacking in essentials, chicks will fade out after a few days.

In addition to the usual seeds and greenfood a soft food seems to be the answer and after several years of unscientific experiments starting from bread-and-milk, I evolved a food last year which proved very successful.

This formula aims to provide a food which is hygienic and consistent in quality and supplies high-class protein and the necessary vitamins A.D.B. Bread rusk is used as being pure and free from mould and consistent in quality. It is obtainable from the butchers quite cheaply.

Here is the formula :—

- 1 lb. Bread Rusk.
- 2 oz. Skimmed Milk Powder.
- 1 oz. Wheat Germ (Bemax).
- 1 oz. Bran.
- 1 oz. Peanut Oil.
- 1 oz. Cod Liver Oil.

The C.L.O. is mixed with the peanut oil and added to the rusk, well stirred in, and the other ingredients added. If feeding Softbills add 1 oz. powdered yeast and 2 oz. of good fish meal. Keep in an airtight tin and make sufficient for a week or two. Avoid strong smelling oil, for it will be decomposed and useless, if not actually unhealthy. This mixture only needs to be moistened with water and allowed to stand for a few minutes before crumbling. In hot weather add more water.

Through the years several friends have tried out my experimental batches and this latest mixture was successfully used with British and foreign finches. I also found that newly imported foreign finches greatly benefited by this mixture, feeding in small quantities frequently to prevent fouling and re-infection where there are large numbers of birds.

I am sure this food is on the right lines and pass on this information to breeders. I shall be pleased to have observations and suggestions for further improvement.

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## THE NATIONAL SHOW 1957

The 46 classes allocated to foreign birds at the National Show this year were the same number as at the 1956 event. With the exception of the class "For all seedeaters larger than a Java Sparrow", which had no entry, the classes were well filled, and the total entry was about 600.

Apart from the fact that there were a number of very rare exhibits, some being shown for the first time in this country, the average quality of all the birds staged was extremely high. The majority of the placings for seed-eaters were made by Mrs. E. M. Schenck and Mr. W. A. Upson, as were those in the classes for Starlings, Mynahs, Toucans, and Quails. Mr. J. J. Yealland and myself placed the rest of the soft-bills, also the seed-eater classes for Weavers, Whydahs, Gouldians, Australian, etc., finches, and other seed-eaters not larger than a Java Sparrow. Mr. Claude M. Payne made the awards in the sections for parrot-like, abnormal coloured foreign, and hybrids with one or both parents foreign.

Mr. R. C. J. Sawyer, with exhibits shown in his usual immaculate style, won the Ezra Memorial Cup, National Rosette, and Award of Merit for best foreign bird, Duke of Bedford Trophy and National Rosettes for best large seed-eater and best insectivorous bird; Mr. G. M. Baker winning the National Rosette for best lovebird.

"Cage Birds," with Mr. G. E. Weston as Show Manager and Mr. F. W. Batchelor as Show Organizer, together with their many helpers, must be complimented on their excellent organization of so great and important an event as this Exhibition of Cage Birds.

A very fine pair of Gold-breasts belonging to Mrs. P. Henderson won a large class (25 entries) for Red-eared, Orange-cheeked, and Golden-breasted Waxbills, etc., followed by C. W. Smith's and G. E. Whitmore's Fire-finches in 2nd and 3rd places.

St. Helenas and Lavenders were 1st and 2nd for H. Mitchell in the next class of 18 entries, followed by Mrs. K. M. Scamell's Cordon-bleus and G. E. Whitmore's Lavenders.

The class for Silverbills, Combassous, Grey Java Sparrows, and Singing Finches was won by A. H. Hayes's Silverbills, followed by V. J. Price's Green Singing Finches and L. Back's Grey Javas. (17 entries.)

A really excellent pair of Red-headed Finches belonging to N. Parker had 1st place, in a class of 14, followed by two nice pairs of White Javas shown by L. Black and Mrs. K. M. Scamell in 2nd and 3rd places; 4th Cut-throats.

There were 17 entries in the class for Mannikins, 1st and 3rd places going to W. Dyson's White-headed and Rufous-backed Mannikins, H. Mitchell coming 2nd and 4th.

The two classes for Bengalese were well supported and the majority of exhibits were of very good quality.

There were four classes for Zebra Finches with from 16 to 27 entries per class, quality was good and a continued improvement in size and type was evident in the majority of exhibits, a number of good pairs being unplaced.

The class for Buntings was headed by Mrs. K. M. Scamell's beautiful pair of Golden-breasted shown in lovely condition, H. Price being 2nd with a nice pair of Lazulis, and A. R. Hellyar 3rd with Rainbows.

The Weavers class was won by C. W. Smith's well-shown pair of Red-billed, followed by G. Anderdon's good pair of Scaly-crowned, Mrs. Field and Son's Rufous-necked coming 3rd.

A very good Queen Whydah was 1st for G. E. Whitmore in the class for Whydahs, followed by Mrs. Scamell's Paradise.

In the class for Gouldians and Parrot Finches, including Pin-tailed Nonpareils, G. E. Whitmore's very good pair of Red-headed Gouldians were the winners, followed by Gouldians belonging to G. Deans and J. R. Jagger.

The mixed class for Australian finches was headed by a lovely pair of Parson Finches belonging to K. J. Keyworth closely followed by G. E. Whitmore's very good Diamond Sparrows in 2nd place, English and Gee's Hecks 3rd, and H. Mitchell's Cherry Finches 4th.

A class containing Violet-eared, Sydney Waxbills, Melbas, etc., was headed by Mr. and Mrs. Fiveash's Violet-eared cock shown in lovely condition and very steady, closely followed by G. E. Whitmore's lovely pair of Violet-ears which were not looking their best. 3rd and 4th, H. Mitchell's Melbas and Violet-eared, both good exhibits.

The Cardinals and Grosbeaks class was won by G. E. Whitmore with an Evening Grosbeak in perfect condition, followed by W. Rolph's very nice pair of Chinese Hawfinches in 2nd place. S/Ldr. and Mrs. Everitt's Pigmy Cardinals coming 3rd, Virginian Cardinal 4th, Chinese Hawfinch 5th, Pope C. 6th, and a very rare Peruvian Brown Grosbeak 7th shown by L. S. Fox. I believe this to be the first time this species has been exhibited for competition.

The class for all other seed-eaters not larger than a Java Sparrow, with 25 entries, was won by W. Dyson's very fine pair of Peter's Twinspot Waxbills, the hen being one of the best coloured I have seen, closely followed for 2nd place by G. E. Whitmore's Green Twinspots, H. Mitchell's Fire Finch 3rd, Crimson-wings 4th, Quail Finches 5th, Junco 6th, Warbling Finch 7th.

Birds of Paradise and Bower-birds class was won by R. C. J. Sawyer's pair of Twelve-wired shown in perfect condition, except that the cock had only 6 wires showing, the same owner also gaining 3rd place with a very nice Regent Bower-bird in very good feather. Second place went to G. E. Whitmore's magnificent Red Bird of Paradise which

unfortunately had a number of missing plumes, 4th to the Satin Bower-bird.

Humming Birds produced 11 exhibits, all in excellent condition, the class being headed by G. Anderdon's charming and very active White-bellied Emerald closely followed by Mrs. D. K. Draper's lovely Black-bellied Mango. R. C. J. Sawyer came 3rd with a nice Swallow-tailed, 4th E. C. Lewis's Copper-tailed Mango, 5th P. Coleman's Dusky Jacobin followed by a Ruby and Topaz and a Waterton's Wood Nymph.

Nine entries made up the class for Sunbirds which was won by W. Dyson's extremely nice pair of Amethyst, 2nd R. C. J. Sawyer with a very fine Taccaze, 3rd Mrs. Draper's Yellow-breasted in lovely condition, 4th G. E. Whitmore's Marico, 5th Mrs. K. M. Scamell's Scarlet-throated.

The class for Sugar Birds was headed by Mrs. J. Webb's very nice Yellow-wing, closely followed by Mrs. Scamell's Blue in 2nd place and the same owner's Black-headed 3rd, both very well staged. G. Anderdon was 4th with Yellow-wings and Sawyer 5th with a Cape.

Zosterops and Pekin Robins made up a strong class with 15 entries, R. C. J. Sawyer's Red-flanked Zosterops gaining 1st place, a very nice pair and winning on rarity from Mrs. Draper's beautifully staged pair of Common Zosterops, which species also gained 3rd, R. S. Westlake, 4th V. J. Price's Pekin Robins, a very good pair. 5th and 6th awards also went to Pekins.

The class for smaller Tanagers was won by Mr. and Mrs. Harris's lovely pair of Blue-blacks, 2nd R. S. Westlake with another good pair of Blue-black not quite so well staged as winners. 3rd N. Parker's nice Silver-blue with K. J. Keyworth 4th and 5th with Many-coloured and Blue-black.

The larger Tanagers and Bulbuls was won by S/Ldr. and Mrs. Everitt's Brown-eared Bulbul, a very steady bird shown in perfect condition. 2nd G. Anderdon's extremely attractive Black Bulbul, 3rd a very good Maroon belonging to A. Hammond, not as steady as winners. 4th Mrs. Scamell's Red-whiskered Bulbul, another nice bird which was followed by the same owner's White-shouldered.

The class for Flycatchers, Redstarts, Chats, etc., was won by Mrs. Draper's Tickell's Flycatcher, J. E. Williams coming 2nd with his lovely Blue Mountain Robin in faultless condition, G. E. Whitmore was 3rd, 4th, and 5th with his Rufous-bellied Niltava, Noisy Robin-Chat, and Natal Robin-Chat, three good exhibits. Sawyer's Japanese Blue Flycatcher and Narcissus Flycatcher, 6th and 7th.

Fruitsuckers, Thrushes, and Jay Thrushes had 14 entries and was easily won by R. C. J. Sawyer's rare and very lovely Swinhoe's Rock-Thrush, beautifully staged and in perfect condition, first time shown. 2nd Lord Gerard's excellent pair of Hardwicke's Fruitsuckers



followed by another good Hardwicke's Fruitsucker belonging to W. Dyson in 3rd place with G. Anderdon's White-eared Jay-Thrush 4th.

Starlings had 16 entries and the class was headed by I. Williams's very good pair of Spreos ; 2nd F. A. Hunt's equally good pair of Hildebrandt's followed by G. E. Whitmore's Purple-headed in 3rd place, a very nice pair in lovely condition. 4th S/Ldr. and Mrs. Everitt's Chestnut-bellied.

The Mynah class was led by S. R. Harris's Mynah, 2nd place going to K. J. Keyworth's beautiful pair of Mandarins shown in perfect condition. 3rd R. C. J. Sawyer's Golden-headed Mynah, the first I have ever seen and first time shown.

The class for Toucans and Touracos was won by G. E. Whitmore with his rare Knysna Touraco, A. V. Griffiths coming second with a very nice Cuvier's Toucan, 3rd N. Parker's Black-billed.

N. Parker won the class for Quails, Doves, and Pigeons with a good pair of Californian Quail, A. S. Woodward coming 2nd with a nice pair of Peruvian Pigmy Doves, G. Gaunt's Necklaced Dove 3rd, Californian Quail 4th, Zebra Doves 5th, and 6th and 7th places going to Chinese Painted Quail.

The class for all other insect, fruit, and nectar-feeding birds not larger than a Pekin Robin with 11 entries was won by R. C. J. Sawyer's Chinese Ruby-throat, beautifully staged in perfect condition. 2nd Mrs. D. K. Draper's Yuhinas, another perfect exhibit. 3rd W. Dyson's Little Minivet, a rare exhibit and a lovely bird, unfortunately slightly rough in tail ; 4th Sawyer's Chinese Yellow-bellied Tit, not in the condition of winners. Mr. and Mrs. Harris came 5th, 6th, and 7th with Yuhinas, Yellow-cheeked Tit, and Blue-winged Sivas.

All other insect-feeding, etc., birds larger than the Pekin Robin but not larger than the Glossy Starling with 14 entries was possibly the most interesting class in the Foreign Section as not only did it contain some great rarities staged for the first time, but any of the placed exhibits were good enough to head a class. 1st R. C. J. Sawyer's Parrot-bills, a lovely pair of birds, seen I think for the first time on the show-bench ; 2nd G. E. Whitmore's excellent pair of Pied Barbets ; 3rd Sawyer's White-collared Kingfisher, a really good young bird, 4th went to the same owner for a lovely pair of rare Dusky Miners, 5th G. Anderdon's Red-faced Mouse Bird staged in faultless condition. 6th N. Parker with a lovely pair of Black-headed Sibias. 7th Mrs. Scamell's Sulphury Tyrant, another grand exhibit.

The class for all other insect, fruit, and nectar-feeding birds was won by R. C. J. Sawyer's pair of Roul-Roul Partridges, beautifully staged in absolutely faultless condition. This pair went on to win the cup and Rosette for best foreign bird. The birds shown were father and daughter, the hen being one of the Roul-Rouls bred by Mr. Sawyer in 1956. In winning the award for the best foreign bird Mr. Sawyer has

established a record, for it is surely the first time this award has been made to an aviary-bred bird. 2nd B. Jolley's very fine Golden-breasted Woodpecker, 3rd G. E. Whitmore's Motmot in very good condition. 4th Sawyer's Sun Bittern. 5th and 6th Mrs. Draper's Naked-throated Bell Bird and Apostle Bird, both good exhibits, well staged.

All the varieties of Lovebirds at present available in this country were represented in the two classes allocated to them. The class for Peach-faced, Fischer's and Masked was won by Messrs. M. and F. Baine's Peach-faced of grand colour and size. 2nd V. E. Wills with a lovely coloured pair of Fischer's. 3rd another very good pair of Peach-faced owned by Messrs. Carr and Hobbs.

A.O.S. Lovebirds and Parrotlets was headed by G. M. Baker's magnificent pair of Abyssinians, the best I have ever seen both in size and colour. 2nd Mrs. Henderson's Madagascar's, a nice pair and not often seen. 3rd D. W. Thomas's Red-faced. 4th and 5th W. H. Adam's and Mrs. Scamell's Nyasas. 6th I. Forbes's Black-cheeked.

The class for Rosellas, etc., was disappointing and was won by G. M. Baker's Gold-mantled Rosella.

The class for Cockatiels, Ring-necks, etc., was won by D. Gaunt's Plum-head Parrakeets, a very good pair. 2nd R. C. J. Sawyer's Blossom-headed, another nice pair. 3rd P. C. James's Plum-heads. 4th G. Anderdon's Cockatiels.

Conures, Grass Parrakeets, Barraband's, Pennant's, etc., made up a class of 5 entries won by I. Forbes's pair of Conures, catalogued as Brown-eared, but undoubtedly Red-bellied, a species not often seen; 2nd A. V. Griffith's Tasmanian Rosella; 3rd H. Mitchell's Sun Conures.

The class for Lories, Lorikeets, and Hanging Parrots was won by G. E. Whitmore with his well-known and very rare Musschenbroek's Lorikeet in perfect condition, followed by R. C. J. Sawyer's Edwards's Lorikeet, another very good bird; 3rd G. E. Whitmore's very nice pair of Blue-crowned Hanging Parrots; 4th N. Parker's Black-capped Papuan Lories; 5th S/Ldr. and Mrs. Everitt's Hanging Parrots, a very interesting exhibit thought to be two Vernalis in immature plumage, but may easily prove to be a sub-species not previously seen on the bench.

The Grey and Amazon Parrot and Cockatoo class was won by Mrs. Ingram's Orange-winged Amazon for the third time, a rare achievement at the National; 2nd Lemon-crested; 3rd Grey Parrot.

The class for any other parrot-like bird not larger than a Grey was won by R. C. J. Sawyer's rare Racket-tailed Parrot which went on to win the Duke of Bedford Trophy for the best parrot-like, also National Rosettes for best parrot-like and best large seed-eater in the Foreign Section. The same owner's well-known Salawati King Parra-

keet shown in faultless condition and pressing the winner hard came 2nd. Major Dilwyn Jones came 3rd with a lovely pair of Meyer's Parrots; 4th Sawyer's Malayan Blue-rumped Parrot, a species not staged for a number of years.

Two hen Red-sided Eclectus made up the last class for parrot-like. H. Mitchell 1st. G. E. Whitmore 2nd.

The class for abnormal coloured Foreign Birds was won by R. C. J. Sawyer's attractive cream Zosterops.

W. R. PARTRIDGE.

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The Ezra Memorial Cup was presented by Miss Ruth Ezra and Mrs. C. J. Morny in memory of their late father, Mr. Alfred Ezra, O.B.E., who was President of the Avicultural Society for thirty years.

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## LONDON ZOO NOTES

By J. J. YEALLAND

A pair of Cormorants collected on Lambay Island during 1947, nested in January on the "cliff" in the Southern Aviary. Two eggs were laid and one chick, now about ten days old, has been seen.

The *Cereopsis* Geese that reared two goslings last year nested in December, but none of the five fertile eggs was hatched. Another clutch of two is now being incubated.

Birds new to the Collection are a pair of Chinese Crossbills (*Loxia curvirostra albiventris*) and a pair of Yellow-bellied Titmice (*Parus venustus*) presented by Dr. K. C. Searle. The Crossbills much resemble the Common Crossbill—a little smaller, perhaps, but not, in the present plumage, appreciably whiter on the underparts. The Titmice are one of the smallest and prettiest species with their glossy black, white, yellow and greenish-grey plumage.

Mr. G. Newmark has sent a gift of a second Malachite-shouldered Fruitsucker or Leaf-bird, a Crested Mynah, and a Malaysian Black-naped Oriole. Miss R. Ezra has presented two Golden Pheasants and Messrs. Brooke Bond and Co. a Sulphur-breasted Toucan.

Monsieur Delacour's very interesting note on the diet of the Humming Birds kept in Brazil by Dr. Béraut and Mr. Ruschi brings to mind the case of a female Sun Gem that has recently died after being here for 1½ years. Without knowing the age of the bird at the time of its arrival and the expectation of life of these very small Humming Birds in the wild state, it would be impossible to judge

whether this is a good record or not. This particular bird was always hovering round the bottles containing fruit-fly pupæ and catching the flies as they came out and I doubt whether it would have lived so long had it not been for the amount of flies that it ate. If only spiders could be bred as easily as fruit-flies !

\*            \*            \*

## BRITISH AVICULTURISTS' CLUB

The fifty-sixth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Wednesday, 13th March, 1957, following a dinner at 7 p.m.

Chairman : Miss P. Barclay-Smith.

Members of the Club : Miss J. Barnes, P. C. Bath, Hylton Blythe, A. W. Bolton, Miss K. Bonner, Mrs. V. M. Bourne, Captain A. A. Clarence, W. D. Cummings, M. F. Draper, W. T. Dring, Mrs. W. T. Dring, Squadron-Leader C. Everitt, Mrs. C. Everitt, Miss S. A. Fothergill, J. C. Garratt, Miss D. Gask, Dr. E. F. Gleadow, F. Grant, Miss M. Hagan, H. J. Harman, M. Hessey, Dr. E. Hindle, Dr. J. R. Hodges, Miss S. I. Hobday, G. T. Iles, F. E. B. Johnsor, Miss S. R. Joseph, Dr. R. S. Kirk, R. G. Kirkham, Miss E. M. Knobel, Miss M. H. Knobel-Harman, Dr. F. B. Lake, G. C. Lynch, P. H. Maxwell, F. Mosford, G. S. Mottershead, S. Murray, Sir Crawford McCullagh, Bart., K. A. Norris, C. M. Payne, A. A. Prestwich, J. H. Reay, D. M. Reid-Henry, D. H. S. Risdon, S. Sanderson, R. C. J. Sawyer, J. L. Sears, D. Seth-Smith, A. E. Sibley, H. A. Snazle, A. C. Soanes, E. O. Squire, Newton Steel, E. N. T. Vane, H. Wilmot, J. J. Yealland.

Guest of the Club : Professor Jacques Berlioz.

Guests : J. Bailey, Mrs. D. Barker, D. B. Barker, Mrs. P. C. Bath, A. R. Bull, T. Crewes, S. A. Croucher, Mrs. S. A. Croucher, Mrs. M. F. Draper, V. Faulkner, Miss H. Frampton, D. C. Garratt, Lord Gerard, Mrs. F. Grant, Mrs. F. B. Lake, E. C. Lewis, A. R. Lockie, Mrs. A. R. Lockie, F. W. Luck, G. T. Lynch, J. D. Macdonald, Dr. E. Macdonald, A. A. MacLaren, Miss E. E. Monnell, Mrs. S. Murray, Mrs. C. M. Payne, Captain R. S. de Q. Quincey, Mrs. J. H. Reay, Miss Roberts, Mrs. D. Seth-Smith, Mrs. E. N. T. Vane, Mrs. H. Wilmot, Miss F. Wood.

Members of the Club, 57 ; guests, 34 ; total, 91.

The Chairman extended a hearty welcome to Mr. J. D. Macdonald, a Principal Scientific Officer of the British Museum (Natural History). Many members had reason to be grateful to Mr. Macdonald, Head of

the Bird Room, and his staff for the ready help and courtesy which was always shown to them when they had occasion to examine skins in the Museum collection. She was glad to have the opportunity of thanking Mr. Macdonald and of expressing the great pleasure it was to have him and Mrs. Macdonald as guests of the Club.

Professor Jacques Berlioz, of the Muséum National d'Histoire Naturelle, was then introduced. Professor Berlioz, the recognized world authority on Humming Birds, had come over from Paris specially to address the Club.

Professor Berlioz gave an absorbingly interesting life history of various species, and briefly described the best means of keeping them in captivity. A full account will appear in the next number of the Magazine.

At the close the Professor received a great ovation. Question time was unfortunately marred by a dance band in an adjoining room.

The next meeting of the Club is on Wednesday, **8th May**.

ARTHUR A. PRESTWICH,  
*Hon. Secretary.*

## COUNCIL MEETING

A Council Meeting was held on 13th March, 1957, in the Council Room, Zoological Society of London.

### SOCIETY'S MEDAL

The Society's Medal was awarded to :

Mr. E. J. Boosey, for breeding the Cuban Amazon (*Amazona leucocephala*).

Mr. A. A. Prestwich, for breeding the Red-faced Lovebird (*Agapornis pullaria*).

## NEWS AND VIEWS

Miss P. Barclay-Smith has been elected a Vice-President of the British Ornithologists' Union.

\*            \*            \*

Last year Madagascar Lovebirds were again available—at a price !  
Now Black-cheeked Lovebirds are being offered at £15-£18 a pair.

\*            \*            \*

Walther Langberg, Copenhagen, has two young Grey Parrots :  
one is being hand-reared by Mrs. Langberg and the other by its  
parents.

\*            \*            \*

H. Murray writes : “ I am trying colony breeding with 19 Nyasa  
Lovebirds this coming season. Last year I bred 15 young from two  
pairs.”

\*            \*            \*

Mrs. A Morgan successfully bred a Jendaya Conure in 1954.  
In 1955 the parents did not nest, but last year three good young ones  
left the nest on 26th August.

\*            \*            \*

O. Hirthe, one of the oldest parrot breeders in Denmark, has bred  
the Severe Macaw. At a recent Copenhagen bird show he exhibited  
the parents with their three young ones.

\*            \*            \*

Jerome O. Wilson, Metairie, Louisiana, reports : “ I have the  
very good fortune of having a breeding pair of Queen of Bavaria's  
Conures. The female has laid and hatched three eggs. The young  
birds are now (1st February) thirteen weeks old.”

\*            \*            \*

Folmer Prip, Copenhagen, writes : “ Last year I only bred 3  
Pennant's, 4 Stanley, 3 Splendids, 2 Bourkes, and 2 Turquoisines.  
A pair of Pale-headed Rosellas laid 17 eggs in 26 days. I took 10 of  
the eggs away, but the hen did not sit on the rest, as she started to  
moult. None of my other birds even made an attempt to nest.”

\*            \*            \*

Sir Crawford McCullagh, Bart., reports his breeding results for  
1956, as follows : Ring-necked, 3 green and 3 lutino ; Green-winged  
King, 2 ; Bauer's, 11 ; Rock Peblers, 2 ; Stanley, 4 ; Many-  
coloured, 4 ; Red-rumped, 10 normal and 4 yellow (2 male and  
2 female) ; Splendid, 8 ; Bourke, 10 ; Masked Lovebird, 3 normal  
and 4 blue ; Fischer's, 4 ; and Peach-faced, 6.

\*            \*            \*

C. af Enchjelm, Helsingfors, writes : “ Last year I was tolerably  
successful with my small birds, breeding Gouldian, Parson, Long-  
tailed and Masked Grassfinches, Star, Bichenow's, and Peter's

Spotted Waxbill, to mention some. I bred seven Three-coloured Parrot Finches, but no Red-headed. I also twice had young of the Indian Yellow Bunting (*E. bruniceps*), but they were only reared for about ten days."

\* \* \*

Paul E. Schneider, San Gabriel, California, records the breeding of his Roseate Cockatoos. Four eggs were laid and all hatched; one young one died after about ten days. The other three left the nest on 12th, 14th, and 16th May. The parents then went to nest a second time; three eggs, two hatched; one young one died after a few days, but the survivor left the nest on 9th August. All four young were successfully reared.

\* \* \*

Breeding results, 1956. Dr. J. Dalborg-Johansen, Odense, Lineolated Parrakeet. Major V. Dilwyn Jones, five Black-headed Conures, one died when a few months old; one Jendaya Conure that died during the bad weather at Christmas; ten Cockatiels; three Ring-necks; and a number of Masked and Fischer's Lovebirds. Kenneth Greenway, eleven Redrumps from two pairs; twenty-one Fischer's from two pairs, and fourteen Masked Lovebirds from three pairs. R. G. Kirkham, Peach-faced Lovebird, many, "I'll soon be up to my knees in them!" Charles Lucas, Burwood, Victoria, two Princess of Wales's, three Turquoisines, and half a dozen Bourkes. J. P. Newell, Athlone, Eire, a nest of four grey Java Sparrows reared. J. H. Reay, two Rock Peblers left the nest, one was, unfortunately, lost after it had been self-supporting for some weeks—its loss was due to a severe storm, the other turned out to be a female; one male Many-coloured; two pairs of Bourkes reared nine good young ones. Brian Turner, Virginian Cardinal, two young left the nest prematurely; one died and the survivor was caged with its parents; an attempt to hand-feed failed. Carleton F. Smith, San Gabriel, California, two Bleeding-heart Pigeons. San Francisco Zoo, two Stanley Cranes, the first Cranes to be hatched there.

\* \* \*

L. Raymaekers, Brussels, 1956 results. A pair of Crimson-wings hatched two young which were given to a pair of Queen Alexandra's with two young of their own. One Crimson-winged died a couple of days later, but the other was successfully reared along with the two Queen Alexandra's. The hen Crimson-winged laid a second clutch of three eggs; the single young hatched was reared by its parents. Many-coloured abandoned five eggs after fifteen days. They were given to a pair of Bourkes; one was hatched and reared in company with three young Bourkes. Splendid, two females reared. Bourkes, 1st pair, three and the Many-coloured, and four in a second nest; 2nd pair, reared seven in two nests; 3rd pair, reared three.

Turquoise, one male reared. Queen Alexandra's, two reared with the young Crimson-winged, two reared in a second nest ; a second pair reared one. Pennant's, four hatched, three reared. Yellow-bellied, a nest of six reared, two males and four females. Golden-mantled Rosella, reared six in the first nest and five of seven hatched in a second. Lutino Ring-necked, two reared. King, four eggs laid on floor of the shelter, incubated but all infertile.

A. A. P.

## REVIEWS

**BIRDS OF SAURASHTRA, INDIA.** By R. S. DHARMAKUMARSINHJI, F.Z.S., M.B.O.U. Published by R. S. Dharmakumarsinhji at Dil Bahar, Bhavnagar, Saurashtra, India. 1955. Price £5 18s. 6d.

The author is a well-known ornithologist who first started his interest in birds while at his preparatory school in England. This book is the result of more than fifteen years' study of the birds of Saurashtra, the country lying on the west coast of India between the smaller projection of Kutch and the straight line of the Gujerat coast. The author states that most of Saurashtra is hilly, but that there is every variety of terrain, including desolate salt plains, flat land growing wheat and millet, open grass, and wooded hills. He adds that many of the birds found in Saurashtra are also found in Kutch, Gujerat, and South Rajasthan, so these areas have also been covered in the book and a special supplement has been added of notes on birds so far not recorded in Saurashtra but found in Kutch and Gujerat.

The first chapter is devoted to sections on migration, local migrations, the study of migration, migration routes, how birds travel, cold as a factor affecting migratory birds, rain as affecting migration and breeding, and sudden influxes of birds. The author says that nowhere does rain play such an important part in local movements of birds as in India and refers to the hordes of birds he has seen appearing at the time of the monsoon, which not only brings birds with it, but acts as a breeding stimulus. Also in the first chapter are sections on bright plumage and bird song, how to study birds in the field and, finally, bird areas in Saurashtra. The author considers the Gir Forest and the Girnar mountain as the best area for resident birds and points out that though most people know the Gir Forest as the habitat of the Indian lion, few know it as a bird sanctuary. He also stresses the importance of the entire Saurashtra coastline and of the Bhal district as the main migratory routes. In the second and third chapters, on a seaside scene



on a February morning and an April day in the Gir Forest, the author makes his readers share his obvious pleasure and delight in the scene by graphic descriptions of the surroundings and the birds.

There then follow full descriptions giving details, identification, notes, distribution, nesting, and food of 357 species. The author is a keen falconer and introduces an interesting innovation by trying to convey, in his notes on the flights of trained falcons, how birds react to attacks from birds of prey and how they escape. There are 33 colour plates depicting 282 species by Somalal Shah, 40 black and white plates from photographs by the author and others, a colour photograph frontispiece by the author, and 16 maps showing distribution and migration routes of various species. At the beginning of the book is a detailed map of the area under review and at the end a map showing the lakes of Saurashtra.

P. B-S.

**A POPULATION STUDY OF PENGUINS.** By L. E. RICHDALE.  
Oxford University Press, London, 1957. Price 42s. net.

The author has made an elaborate study of the Yellow-eyed Penguin, *Megadyptes antipodes*, in southern New Zealand, extending over eighteen years. An earlier monograph dealt with *Sexual Behaviour in Penguins*, and the present work is concerned mainly with detailed observations in various breeding areas within about twenty miles of Dunedin. Four areas were worked thoroughly each season, and it is considered that practically all the breeding birds were found each season, and for some years nearly all resident non-breeding birds.

The data are presented in a series of tables dealing with first the length of the pair-bond and such factors as divorce, separation, disappearance and death leading to its dissolution. The incubation period seems to vary not only among individuals but between seasons. The chick period lasts on the average about 106 days. The amount of food received by chicks was determined by weighing the chicks four times a day. An average of 818 grammes of food per day was given to two chicks in the last eighteen days of the guard stage, but on one day the total reached 1,418 grammes. The young birds wandered considerably during the first five years, but then they became mature and rarely moved to a new breeding place. Out of 411 fledglings which entered the sea, 6 per cent returned to breed in their place of hatching, 8 per cent to the same area, 9 per cent to the nearest breeding area, and 7 per cent to a more distant area.

About 52 per cent are estimated to die, leaving a balance of 18 per cent which may breed in areas to the south of Otago Peninsula. Survival and mortality factors are given in detail, and the precise composition of a penguin community. There is also a chapter on the moulting season including comparisons with other species of penguins.

It was essential for these studies to have some system of marking, and an aluminium band fixed on the tarsus was the method generally adopted. The numbers were stamped on the band in four places, so that whichever way the bird was standing the number could be seen and read by the aid of a telescope. Footmarking involving the punching of six holes in the web of each foot proved much more satisfactory, and according to the author, without it the material for this monograph would never have been obtained.

Whilst this is primarily a book for the specialist, the detailed study of such an interesting bird will appeal to a much wider public.

E. H.

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## NOTES

### RED-EARED WAXBILL—CORRECTION REGARDING SPECIFIC NAME

In my note on "A natural colour variety of the Red-eared Waxbill" published in the November-December number, 1956, of the AVICULTURAL MAGAZINE, I referred to the Red-eared Waxbill as *Estrilda astrild*. The specific name I gave is not, however, correct, and should have read *Estrilda troglodytes*.

C. J. O. HARRISON.

## CORRESPONDENCE

### REQUEST FOR OBSERVATIONS ON BIRDS WITH DEFORMED BILLS

I am collecting information about birds with deformed bills and I think possibly that some of your members might be able to help me. I should be interested to hear of any cases of birds with bills which are deformed in any way, the relevant points being:—

- (a) The type of bird ;
- (b) Full details of the deformity (drawings or photographs would be particularly helpful) ;
- (c) Any effect the deformity had on the feeding or other habits of the bird ;
- (d) Whether the deformity was permanent or only lasted for a certain time ; and
- (e) Cause of death, if known.

It is possible that such deformities may be inherited in some cases and any evidence of this from breeding—either in support or in opposition to this view—would be valuable.

I should be very grateful for any information of this sort sent to me.

D. E. POMEROY.

SIDNEY SUSSEX COLLEGE,  
CAMBRIDGE.

## FRENCH MOULT RESEARCH

The National Council of Aviculture is sponsoring a three-year programme of research into the cause of French Moulting in Budgerigars, to be undertaken in the Department of Agricultural Chemistry in the University of Reading. There is some evidence that French Moulting may, in certain cases, be associated with a quantitative or qualitative deficiency in the crop-milk fed to the young chicks, and, as part of this investigation, we are studying the structure, development, and possible endocrine control of the glands responsible for the production of this secretion.

A condition similar to French Moulting has also been observed in some species of lovebirds and in Red-rumps, and there is good reason to believe that all parrot-like birds feed their young on crop-milk for at least the first week after hatching. We are interested, therefore, in studying the structure of the milk-secreting glands in other psittacine birds as well as in Budgerigars, and if any members of the Avicultural Society are unfortunate enough to lose any of their birds while incubating or while feeding young, we should be very glad if they would send the carcasses to us, with the date on which the first egg was laid, the date of death, and whether or not young had hatched.

It is not known whether the cock produces crop-milk as well as the hen, so birds of both sexes would be equally welcome. It is important that they should be sent as soon after death as possible, and if any substantial delay occurs, it would be very desirable if they were preserved in 5 per cent formalin, or failing this, in 50 per cent methylated spirits. A small cut should be made in the body wall of the thorax and abdomen to allow the preservative to enter and, after soaking in the liquid for a few hours, the bird may be removed and packed in damp paper in a polythene bag for postage.

The bodies of any young parrot-like birds which die while in the nest would also be of great value for chemical investigation of their crop-contents.

We are hoping that this investigation will make a real contribution to the knowledge of the physiology and nutrition of psittacine birds, and any help which members are able to give will be greatly appreciated.

All specimens should be posted to me at the University.

T. G. TAYLOR.

DEPT. OF AGRICULTURAL CHEMISTRY,  
THE UNIVERSITY, READING.

## BREEDING THE BLACK-BREASTED PLOVER

After reading in the December number of our Magazine Mr. Gerrits very interesting account of the breeding of the Australian Black-breasted Plover *Zonifer tricolor*, I would like to supplement his remarks by saying that after keeping two or three pairs in the Lilford aviaries for some years, we found them charming subjects to possess and considerably less difficult to maintain in health than some of the rarer British waders. Our examples did well when kept in a large pool aviary with other waders. They partook of the usual waders' mixture and would also eat wheat. I have no reliable history of the species available, but should imagine they may frequent dry upland pasture. Mention may be made of this because when purchased I found them in a London store (Messrs. Chapmans) in excellent condition, but supplied with no other food except a dish of dry, small, brownish-yellow millet seed. Unsuitable as this appeared to me they were partaking of it freely and I was assured later that it was the only food that had accompanied them on the voyage.

As to the breeding of the Black-breasted Plover in confinement I may add that as the spring approached, paired pairs were better removed to quieter quarters. Therefore our most promising pair were summered in a small aviary the whole floor space of which consisted of a well kept miniature lawn 12 feet by 14 feet. Here, as described by Mr. Gerrits, they made a beautiful rubbing or nest in the short turf and for two seasons around 1930 reared their young, I believe a two and a three. From memory these birds were very noisy and demonstrative at the nest but never seemed really to mind their aviary being entered for supplying food. When the young were newly hatched, however, it was advisable to note the exact position of each squatting chick before stepping inside.

My diary of 1930-31 states the young were quite easy to rear.

LILFORD, OUNDLE, PETERBOROUGH.

A. F. MOODY.

# THE AVICULTURAL SOCIETY RECEIPTS AND PAYMENTS ACCOUNT

Year ended 31st December, 1956.

RECEIPTS				PAYMENTS			
	£	s.	d.		£	s.	d.
To Balance at Bank, 1st January, 1956 . . . . .			6	By Printing of Magazine . . . . .		1,162	17 1
" Ordinary subscriptions . . . . .			12	" Coloured plates . . . . .		198	11 10
Arrears . . . . .		8	5 0	" Authors' separates . . . . .		19	2 6
Current . . . . .	973	17	5	" Translation fees . . . . .		6	10 0
In advance . . . . .	169	18	8	" Printing <i>Grebes</i> . . . . .		81	4 6
Life membership subscriptions . . . . .			1,152 1 1	" Sundry printing and stationery . . . . .		59	14 8
" Avicultural Society of America . . . . .			105 0 0	" Printer's charges and expenses . . . . .		17	18 6
" Donations . . . . .			57 8 10	" Honorarium to Editor . . . . .		100	0 0
" Sales of Magazines . . . . .			86 18 5	" Secretarial . . . . .		52	0 0
" Sales of <i>Australian Parrots</i> . . . . .			56 16 6	" Preparation of Index . . . . .		10	10 0
" Sales of <i>The Anatinæ</i> . . . . .			20 6 0	" Newman Library insurance . . . . .		2	5 0
" Sales of <i>Grebes</i> . . . . .			11 0 0	" Advertisements and publicity . . . . .		29	12 11
" Sales of surplus books . . . . .			4 9 9	" Expenses at Council Meetings . . . . .		5	5 0
" Sales of waterfowl rings . . . . .			128 10 0	" Medals and engraving . . . . .		9	2 9
" Sales of coloured plates . . . . .			6 10 9	" Waterfowl rings . . . . .		5	5 0
" Sales of reprints . . . . .			31 6 0	" Postages . . . . .		34	14 10
" Advertisements . . . . .			2 5 10	" Bank charges . . . . .			8 4
" Dividends . . . . .			4 1 3	" Miscellaneous expenditure . . . . .		9	8 0
			66 19 9				
				" Balance at Bank, 31st December, 1956 . . . . .	1,804	10	11
					558	15	9
					<u>£2,363</u>	<u>6</u>	<u>8</u>

I have examined the above Account with the books and vouchers of the Society and certify it to be in accordance therewith. I have verified the Bank Balance.

LONDON.  
18th February, 1957.  
J. WATKIN RICHARDS, }  
Certified Accountant. } Hon. Auditor.

## CANDIDATES FOR ELECTION

- YOUSF HAJ ALI, Shorja St., Khan Al-Dejaj, Baghdad, Iraq. Proposed by Miss K. Bonner.
- GILMAN H. ALKIRE, 6153 Garrison Drive, Los Angeles 42, Calif., U.S.A. Proposed by Miss K. Bonner.
- Sr. AUGUSTIN ARROYO, Apartado Postal 18, Zacapu de Mier, Michoacan, Mexico. Proposed by A. A. Prestwich.
- RONALD S. BAKER, Warooka, South Australia. Proposed by A. A. Prestwich.
- JACK BERLIN, P.O. Box 20826, Pico Heights Sta., Los Angeles 6, Calif., U.S.A. Proposed by A. A. Prestwich.
- Dr. CLAUDE W. BICE, R. T. French Co., 1 Mustard Street, Rochester, N.Y., U.S.A. Proposed by Professor William C. Dilger.
- RONALD BLAKELY, Lincoln Park Zoo, Chicago 14, Ill., U.S.A. Proposed by W. B. Frostick.
- ARTHUR BRIDGES, 8 Hawker Street, Moe, Victoria, Australia. Proposed by Miss K. Bonner.
- G. RAYSON BROWN, 250 West Duarte Road, Arcadia, Calif., U.S.A. Proposed by Miss K. Bonner.
- Mrs. LUCILLE Z. BRUNS, 3401 E. Anaheim Street, Long Beach 4, Calif., U.S.A. Proposed by Miss K. Bonner.
- D. H. BURDEN, 500 S. Alameda Street, Compton, Calif., U.S.A. Proposed by Miss K. Bonner.
- JEROME BUTEYN, Star Route, Box 17, San Luis Rey, Calif., U.S.A. Proposed by A. A. Prestwich.
- DAVID R. CORBETT, c/o School House, St. Marys Hill, Chester. Proposed by Miss K. Bonner.
- Dr. VICTOR COSTA, Avenida Rio Branco, 4-8° andar, Rio de Janeiro, Brazil. Proposed by Dr. R. Tomski.
- WALTER S. CURL, Grand Junction Road, Myrtle Holmes, Adelaide, South Australia. Proposed by A. A. Prestwich.
- KAI CURRY-LINDAHL, Nordiska Museet and Skansen, Stockholm, Sweden. Proposed by A. A. Prestwich.
- THE MARCHIONESS OF DUFFERIN AND AVA, 4 Hans Crescent London, S.W. 1. Proposed by W. C. Hall.
- Mrs. R. D. EDWARDS, RFD, McClellanville, S.C., U.S.A. Proposed by Miss K. Bonner.
- M. W. ELLIS, 60 Buckmaster House, Holloway Road, N. 7. Proposed by C. Oliver.
- STEWART FERNEBACH, 32 Powell Road, Allendale, New Jersey, U.S.A. Proposed by A. A. Prestwich.
- ARTHUR E. FITZ, 1450 Washington Hgts. Ann Arbor, Michigan, U.S.A. Proposed by A. A. Prestwich.
- C. M. FROST, 25th Floor, Esperson Bldg., Houston 2, Texas, U.S.A. Proposed by Miss K. Bonner.
- R. A. FULTON, 99 John Street, New York 38, N.Y., U.S.A. Proposed by Miss K. Bonner.
- RAY S. GARWOOD, Winkie, River Murray, South Australia. Proposed by Miss K. Bonner.
- Mrs. J. S. GOODBRAND, P.O. Box 610, Duncan, British Columbia, Canada. Proposed by Miss K. Bonner.
- F. A. GREEN, The Pyket, Church Lane, Little Billing, Northampton. Proposed by Miss K. Bonner.
- J. H. GUNDERSON, Dos Pueblos Ranch, R.F.D. 1, Goleta, Calif., U.S.A. Proposed by A. A. Prestwich.
- R. HALLORAN, 42 Parliament Street, Derby. Proposed by Miss K. Bonner.
- JOHN HARDING, 7424 Phillips Avenue, Chicago 49, Ill., U.S.A. Proposed by Miss K. Bonner.
- The Hon. JOHN HENNIKER-MAJOR, Petleys, Downe, Kent. Proposed by E. J. Boosey.
- LESTER HOFFMAN, 1322 S. Mountain Avenue, Duarte, Calif., U.S.A. Proposed by Miss K. Bonner.
- Mrs. RUBY P. HOOD, 575 Cypress Avenue, Colton, Calif., U.S.A. Proposed by Miss K. Bonner.

- Mrs. RUSSELL HUBBELL, 3521 Chamouné, San Diego 5, Calif., U.S.A. Proposed by Miss K. Bonner.
- A. C. HUNT, "Culwulla," Private Bag, Inverell, N.S.W., Australia. Proposed by A. A. Prestwich.
- A. R. HYND, 1 Wauchope Place, Langholm, Dumfriesshire, Scotland. Proposed by Miss K. Bonner.
- ARTHUR BADEN ST. CLAIR JAMES, 471 Station Street, Carrum, Melbourne, Victoria, Australia. Proposed by A. A. Prestwich.
- J. H. JEFFS, F.Z.S., Green Gables, 2 Church Road, Alsager, Stoke-on-Trent. Proposed by A. A. Prestwich.
- C. W. JORGENSEN, 10530 La Lunitas, Tujunga, Calif., U.S.A. Proposed by Miss K. Bonner.
- P. J. KEOGH, 17 Woodstock Road, Thurcaston Road, Leicester. Proposed by A. A. Prestwich.
- J. R. W. KING, The Mill School, Lyminge, Folkestone, Kent. Proposed by Miss K. Bonner.
- ERLING KJELLAND, 1730 N. Sedgewick, Chicago, Ill., U.S.A. Proposed by N. Pigg.
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#### CHANGES OF ADDRESS

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- JAMES M. HARTSHORNE, to 108 Kay Street, Ithaca, New York, U.S.A.
- The Rev. B. C. R. HENRY, to B.M.S. Station, Udayagiri, Ganjam District, Orissa State, India.
- E. J. T. HOUSDEN, to Senanga, Barotseland Protectorate, Northern Rhodesia.
- DR. LESLIE HOUSDEN, to Roundhead Cottage, Old Basing, Basingstoke, Hants.
- J. F. INGLIS, to The Vale Hotel, Alford, Aberdeenshire.
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- NOLAN PIGG, to 3707 Jackson Street, Bellwood, Ill., U.S.A.
- RONALD STEVENS, to Fermoye Lodge, Costelloe, Co. Galway, Eire.
- MRS. C. H. WAKEFIELD, to 1437 Alameda de las Pulgas, Redwood City, Calif., U.S.A.
- J. C. WHITE, to 137 So. Carolina Dr., El Paso, Texas, U.S.A.
- W. A. WINGATE, to 46 Jewry Street, Winchester, Hants.

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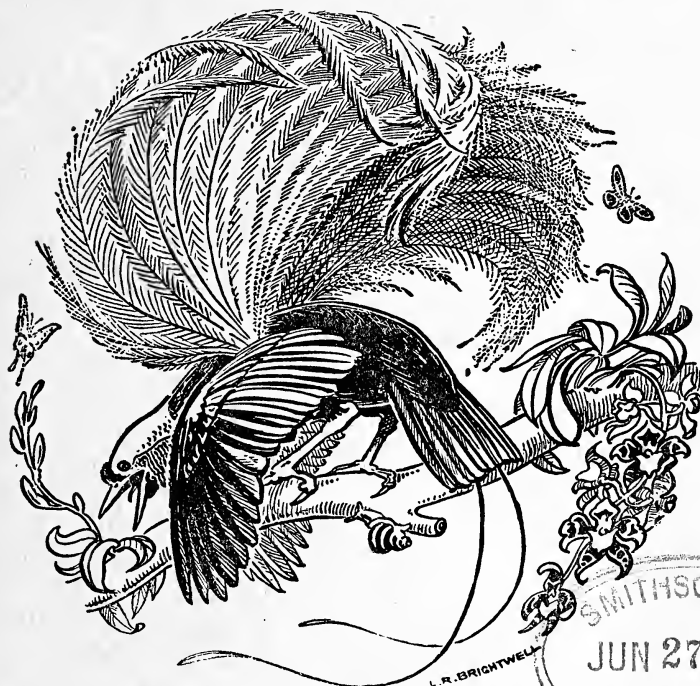
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# AVICULTURAL MAGAZINE



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Founded 1894

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† **Hon. Secretary and Treasurer : A. A. Prestwich, 61 Chase Road,  
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**Assistant Secretary : Miss Kay Bonner.**

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**The Editor : Miss Phyllis Barclay-Smith, 51 Warwick Avenue, London,  
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WEDGE-TAILED SUNBIRDS.

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY  
AND THE AVICULTURAL SOCIETY OF AMERICA

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MAY-JUNE, 1957

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## THE WEDGE-TAILED SUNBIRD

(*Anthobaphes violacea*)

By J. J. YEALLAND (London, England)

The Wedge-tailed or Orange-breasted Sunbird was originally described in 1766 by Linnaeus when he named it *Certhia violacea*. It is the only member of its genus and its distribution is confined to the extreme south-west of Africa.

Stark (*Fauna of South Africa, Birds*, vol. 1) says: "The Orange-breasted Sunbird frequents open uncultivated country, rough hillsides, and the slopes and summits of mountain ranges, and especially where various heaths and proteas abound. It has a considerable vertical range, from sea-level to a height of 4,000 feet or more, and being a hardy little bird, seemingly indifferent to cold and wet, it is quite at home on the bleak and foggy mountains of the coast ranges in Cape Colony."

Stark goes on to say: "These Sunbirds feed largely on the nectar of various heaths, occasionally on that of proteas, also on small insects that frequent these flowers, and on gnats and flies which they dart upon, like Flycatchers, from a perch to which they constantly return. Like the Long-tailed Cape Sugar Birds, they breed during the winter rains, the nests near Cape Town being usually built in June and the eggs laid in July. This coincides with the flowering season of certain heaths and proteas on whose nectar they feed their young. On one occasion I found a nearly completed nest at the end of March. The nest, oval and domed, with a small side entrance near the top, is built of small flexible twigs of heath, dry grass, and narrow downy leaves, thickly lined with the soft white petals of a protea. It is not pendant like the nests of other Sunbirds, but is attached by its sides to the stalks in the centre of a thick bush of heath, a foot or eighteen inches off the ground. The eggs, two in number, are white dotted all over, but most thickly round the greatest diameter, with small spots and streaks

of greyish brown. They measure  $0.65 \times 0.48$ . On one occasion I noticed a female remove the eggs from a nest from which I had startled her, and place them under some thick undergrowth a few feet away. She apparently carried them in her bill. A second brood is frequently reared in September and October. From December to March these Sunbirds are generally in small family parties of four or six, the parents and their young, one of the band being nearly always a male in full plumage, while one or two are young males showing varying amounts of metallic plumage."

The flocking habit is interesting: this Sunbird certainly seems less aggressive than many others. No doubt it would thrive—as indeed do many of the more tropical ones—far better in an outdoor aviary than in a cage and would need only a little warmth in the shelter during winter. I once kept a pair in a large cage under quite cool conditions and they did well, but then the following summer when I was away, both escaped and were not heard of again.

\* \* \*

## BREEDING GOLDEN-MANTLED ROSELLAS SINCE 1951

By DIETER OVERLÄNDER (Honnelf/Rhein, Germany)

When I write "Golden-mantled" I do not intend to say that my Rosellas are pure Golden-mantled but they look like them. I believe that in Germany many, or most, of the birds so called are hybrids, or youngsters of hybrids, between *cecilae* and *eximius*. These "hybrids" in many cases look like *cecilae* so far as the colour is concerned, but in size they seem to favour the larger *eximius*. But this is only an idea of mine and not proved.

I hope the reader will not be disappointed that this breeding-account is not a story of splendid successes.

In 1951 I obtained my first pair of Rosellas, an old cock and a young hen still in immature plumage. In the middle of April, 1952, the cock drove the hen through the aviary, but as this aviary is 12 m. in length he could not harm her. Then I realized that she was too young and exchanged her for another belonging to my uncle. This hen after being in the aviary for only eight days was fed by the cock, and ten days later she laid her first egg. Unfortunately, this first clutch, five eggs, was destroyed after two youngsters had hatched because the log fell to the ground. The parents stopped breeding for six weeks and then they had another clutch of three eggs, which all hatched and were reared. But misfortune had not ceased as in winter the old hen escaped. Some months later I was told that she had been caught, fed on poultry food, and then escaped again.

In 1953 I obtained another hen from a first nest of 1952. This hen, though still in immature plumage, had four eggs in one nest, three of which hatched and were reared. Two other young pairs, two birds of which had been bred by myself, were doing nothing but feeding occasionally and inspecting the nests. I suppose it is not so difficult to breed from young hens as from young males.

In 1954 I had three pairs in full adult plumage and one young pair. I hoped to realize good results. The old pair had six eggs all of which hatched. The nestlings did well for a fortnight after emerging from the shell, then the eldest fell ill. The down was wet and stuck to the body. Every second or third day I found another dead young one. I believe they all died from cold and wet weather.

The other pair had a clutch of seven eggs. When laying the fourth the hen became egg-bound. She had left the nest and sat on the ground. I took the bird indoors and tried to massage the egg out of the body. I took her in my left hand and with three fingers of the right hand I pressed the egg out. But there are two points which must be observed. You must not try to do things too quickly and must watch the bird and feel or see when the hen herself is straining to get rid of the egg and just at that moment you must help her. Then sometimes the egg must be moistened, especially when it is visible. Naturally, this way of curing is only possible when the bird is in good condition and when the egg-binding is not caused pathologically. In this way I have been successful three times. I suppose that the birds got egg-bound because the temperature had fallen rapidly. I think, however, that one can very often prevent it by feeding cod-liver oil. Thus in 1954 my Rosellas had twenty-eight eggs and reared only two young.

1955 was another poor season. When three young of my old pair had died I took the remaining two and reared them by hand. They were fed on milled sunflower seed, oats, and millet. Some greens and carrots were added and the food was moistened and warmed. The two youngsters did very well and turned out to be a pair. The male escaped, when I did not think he was yet able to fly; but the next day he returned and I was able to catch him. He is still in my possession, and when I enter his aviary he takes sunflower seeds from my hand and sits on my shoulder. Two other young Rosellas I had taken out of their nest some weeks later. These birds were fed for some time on hulled millet, used for human consumption. Probably some vitamins were missing in this food and, though I added greens and carrots every day, the plumage developed very badly. They could not fly till they were eight months old.

Last year (April, 1956) there were three pairs of Rosellas on eggs and I hoped that we would have a good season. But I believe that this hope is a characteristic feature of every bird-lover all over the world.

## HUMMING BIRDS

By Professor J. BERLIOZ (Paris, France)

(Address given to the British Aviculturists' Club, 13th March, 1957.)

Among the numerous groups of perching birds, the Humming Birds, which constitute the family Trochilidae, are, with the Trogons, certainly the best defined and most isolated of all, really showing no connecting link with any other type. Nothing is known about their ancestors and even their actual affinities remain quite obscure, although they are most generally considered by modern systematians to be more or less closely allied to the Swifts.

The chief characters are as follows :—

Mostly of very diminutive size (the largest like a Swift, the smallest like a bumble-bee).

Bill, very thin, elongated, tubular, pointed, either straight or curved downwards or, sometimes, upwards.

Peculiar tongue, long, protractile, bitubular at the end, and attached to a curious bony formation encircling the skull, not unlike that of the Woodpeckers.

Extreme shortness of the wings and legs, more reduced than in any other type of birds. The wings always have ten primaries, but not more than five or six secondaries. The feet, also very short, always have four toes, often with strong claws.

Brilliancy of the plumage, mostly composed of scale-like feathers ; the tail always composed of ten rectrices, very seldom less. The shiny appearance of the plumage is due to the physical structure of the feathers, which produces various shades of iridescent colouring, unrivalled by other birds, but always devoid of any pigment except black or rufous. Males and females are sometimes alike, but generally differ in various ways ; however, sometimes they are quite dissimilar in pattern and colouring.

They are very active, often aggressive and pugnacious little birds, fighting among themselves and even attacking much larger and stronger birds, such as birds of prey and Tyrant-Flycatchers, utilizing their wonderful power of flight and their very sharp acute bill. They have but few natural enemies : however, it is said that the smaller species, when hovering in front of flowers, may be caught and eaten by aerial predators, such as the Bemtevi Tyrant and even fall victims of the big American spiders.

Humming Birds are strictly confined to America, but here they are to be found everywhere where there are flowers. Although much more numerous in the tropical parts of America, some of them spread, during the northern summer, as far north as Alaska and Labrador. Similarly, in the southern hemisphere, one species at least is to be found during the southern summer as far south as the Strait of Magellan.



The reason why the life of the Humming Birds seems so closely connected with the existence of flowers is because in flowers they find both food and drink. It has long been wrongly believed that their food was essentially composed of the sweet secretions of the flowers ; but it is now well known that animal food is much more necessary to them and in fact they feed chiefly on very small insects which are themselves attracted by the liquids inside the flowers. Humming Birds are perfectly able, too, to catch the flying insects on the wing, using their long protractile tongue for this purpose quite as cleverly as in picking them out from the flowers.

Even in some countries where flowers are scarce, as is the case in the Juan Fernandez Islands, Humming Birds remain almost strictly insectivorous. In other very dry parts of the American Pacific Coast, where there are only few soft insects, Humming Birds may in some way become more or less frugivorous, feeding mostly on the juice of damaged cactus fruits, when the latter have been attacked by ants or other animals.

Considering the wide variation of food these birds may adopt according to climatic conditions, it is less astonishing to find them so widely spread everywhere in America, from the low tropical rain-forests to the highest mountain ranges or in subdesert areas. Owing to their perpetual need of food they are particularly numerous in cultivated areas, where gardens and orchards provide all kinds of flowers and insects nearly the whole year round. For the same reason, the Humming Birds which nest in temperate countries are migratory and several species every year make very long voyages, starting from their breeding grounds in Canada and Alaska and reaching as far south as Central America and Panama, where they spend the autumn and winter months.

The peculiar structure of the wings affords the Humming Birds a most peculiar and unique mode of flight ; it consists in an uninterrupted sequence of very rapid wing-beats, the speed of which may attain 50 or more per second for the smaller species. The name " Humming Birds " is actually derived from this flight, which closely resembles the flight of certain moths and produces similarly characteristic sounds. Another peculiarity of their ability of flight is that they are the only birds which are able to fly backwards, which they can do at the same speed and quite as easily as in any other direction. But, on the other hand, they cannot use their feet for any motion at all when perching on a branch or sitting on the ground. They will be seen remaining nearly motionless on the same twig for several minutes, then they will suddenly fly away at an astonishing speed and, after acrobatic flights in the air, come back to the same place, just as flycatchers do.

Nearly all their food is obtained on the wing, both the small insects

captured in the air and the food sucked from the flowers. They hover rapidly at the same place in front of the flower and push in the long bill and protractile tongue to reach the nectar and insects inside. However, on a few occasions, and especially in the case of certain mountain species which are more sluggish in their habits, they perch close to the flower, taking their food from the latter just as most of the Passerine nectarivorous birds do.

Nesting habits : there is still much to be learned about their nesting habits. Until quite recently it has been accepted as a strict rule that Humming Birds are polygamous and that both sexes, except for the short period of mating, live quite independently apart from each other, even during migration. Their nests are generally most delicate, though solid, cup-shaped structures, attached to twigs or various other supports, and the building of which is done by the females alone. They almost invariably lay two eggs, the latter being uniformly white and comparatively large for the size of the bird. Females also undertake alone the entire incubation and the rearing of the chicks. These remain about twenty-four days in the nest, until their wings are completely grown, as they are unable to move until they acquire the same ability of flight as the parents.

However, some very recent observations made in Venezuela seem to prove that, at least in a few cases, the male does not remain quite so indifferent to the rearing of the young as is generally believed. These observations concern a somewhat large and common species of Humming Bird, *Colibri coruscans*. The observer (Dr. E. Schäfer) discovered a nest containing one young, newly hatched, and one egg, to which obviously male and female came alternately both to incubate the egg and to feed the young bird (although both sexes of this species are more or less similar in appearance, the male had an abnormal feather pattern which rendered him unmistakable).

It is impossible to ascertain whether the same habits are to be found in all individuals of the same species or not. But it may be recalled that there is a modern theory that among birds in which the two sexes are similar in appearance, both parents generally assume the same duties in the rearing of the young. And, on the other hand, it is a well-known fact now that in many so-called "polygamous" birds, individual cases of monogamy may exceptionally occur.

Finally some words may be added concerning Humming Birds in confinement. At least three conditions are necessary for their good health and maintenance : space for flying ; insects as their fundamental food ; water and moisture for most species.

For more than half a century efforts have been made to keep these beautiful tiny creatures in confinement. But after many failures it was not until some thirty years ago that these efforts became really successful. The long delay involved in bringing them from America

to Europe, the need of fresh food every day, the wrong idea that sweet liquids constituted their normal diet, have been the chief causes of so many failures, and, for the few specimens able to reach Europe at that time, they generally died suddenly after a few weeks at most. I remember in 1922 visiting one of the first attempts made in Paris to maintain a small collection of living Humming Birds in Count de Ségur's aviary. Each bird was kept alone in a special cage, and several times every day was given a few minutes of freedom in a very large room.

In more recent times great improvement has been achieved both in transportation and in giving the best conditions of life in confinement. There is no doubt that when still more has been learned about their life in the wild, it will become still less difficult; but it is certainly rather unlikely that they will ever become real "pets" for their owners.

\* \* \*

## VISIT TO THE ZOOLOGICAL GARDENS, CHESTER

The Council of the North of England Zoological Society, through the Director-Secretary, Mr. G. S. Mottershead, kindly invite members of the Avicultural Society to lunch at the Zoological Gardens, Chester, on Tuesday, 25th June, 1957.

The invitation to lunch is *confined to members*. Free admission to the Zoo is offered to friends, and lunch may be reserved for them. Members intending to accept the invitation must notify the Hon. Secretary, 61 Chase Road, Oakwood, N. 14, before 18th June, 1957.

The Chester Zoo is 180 miles from London, 15 miles from Liverpool, 40 miles from Manchester, and 72 miles from Birmingham.

Suggested trains (subject to confirmation) from and to London are :—

Leave Euston, 8.30 a.m.	Arrive Chester, 12.24 p.m.
Leave Chester, 5.10 p.m.	Arrive Euston, 8.50 p.m.

Fares (subject to revision) return, 1st class, £4 4s. 10d.; 2nd class, £2 16s. 6d.

There are excellent bus services from Chester Market Square, Service No. 13, to within 150 yards of the main entrance to the Zoo, and a regular direct Zoo service to the north entrance; also a direct service from "Woodside", Birkenhead, to the north entrance.

Visitors arriving by train will have to proceed by bus to the Market Square in order to catch a bus to the Zoo. If members arriving by the London train would kindly advise the Hon. Secretary, arrangements could be made for them to be conveyed direct to the Zoo from the station.

## ADVENTURES WITH SOFTBILLS

By J. R. VAN OOSTEN (San Marino, California, U.S.A.)

*(Continued from page 50)*

During the month of January, 1956, I was very fortunate in being able to purchase from Professor Carl Naether a beautiful pair of Black-chinned Yuhinas in excellent condition. I already had one hen which had been imported a few years ago from India. In the same shipment I received a Golden-eyed Babbler and the two arrived as good friends and have remained so. It was a funny sight to see the Yuhina follow the Babbler, about twice her size, everywhere it went. Never having seen any of these Babblers I was unable to sex mine, but I am sure that it is a male as it sings all the time. The new pair of Yuhinas were liberated after four days in a holding cage to allow the other birds in the aviary to get used to them. My greatest fear was that the cock might kill the odd hen, but upon being released the pair paid no heed to her. Therefore I left her in, a thing which I now very much regret.

Sexing these little birds I find fairly easy as there is a difference of colour on the breast of the hens. The colour throughout is uniform in both the male and the female with only that one exception. These breast feathers are almost a fawn grey, the male's being dark grey. Also I found that the male is somewhat larger than the two hens. This I noticed when I bought the pair, but with the three of them it is quite unmistakable. Both sexes have a little song, but the male's lasts longer and is uttered more often and is a little deeper in tone. One of their characteristics is when they are apart they call to each other in a short one-note call, which increases if something is found ; whereupon the other one comes at once. They are extremely inquisitive and spent the first few weeks exploring all the corners of the " glass house " and adjoining flight. They also spend a great deal of time hawking fruit-flies, and with each fly caught one hears the snap which most Flycatchers make. This sound also reminds one of the snap which Manakins make. One day while visiting Mr. Isenberg I heard his Black and White Manakin make the same snapping noise, but I believe that Manakins make this noise when not hawking insects.

In March the pair was observed inspecting the nest-boxes and finally they settled on a small finch nest-box which had a platform in front. The materials they used were string, cotton, pieces of burlap, small twigs, dog hair, with a lining of bird feathers, string, and dog hair. Being drafted into the military service at the end of March I was unable to keep any notes of what happened during the following two months. Upon my return in June I at once noticed that my Yuhinas

now totalled five instead of three. No doubt the success can be once again attributed to the fruit-flies as there was always an ample supply to be had. I feel strongly that with cultures of these flies, two or three to an aviary when young are in the nest, plus a few mealworms, and where possible other live food, it would not be impossible to rear many more of the baby softbills to maturity. The young were decidedly on their own because when they begged their parents for food and none was offered they flew to the feeding tray and proceeded to eat by themselves. They ate soaked currants, egg food, apple, grapes, and drank a little honey-water; also they were able to hawk flies, so they were definitely not dependent upon their parents.

I had noticed that since my leaving the male had become somewhat more aggressive and that should have been the sign for me to remove the three birds. However, as we often do, I left them in there and the day before I left to go back to the Navy after a fourteen-day leave I found three dead Yuhinas on the ground. The old hen was taken to the taxidermist as were the two young, but I had all the insides taken to a lab and as luck would have it the young were a male and female. There is no doubt the male Yuhina killed the other three but of this I cannot be sure. These graceful little birds are hard to come by here in the States and the loss was very saddening. If I should lose one of the pair, especially the hen, it would be a long time before I could replace it. However, if the success is repeated next year the young will be separated as soon as they are able to feed by themselves.

The young resembled the parents except for being lighter in colour throughout the body and their crests were not yet as black. The bill did not show the colour of the parents. When adult the lower mandible has a spot of red at the joint where the bill meets the body, their feet were also not as full of colour. Beyond this they resembled and possessed all the funny and comical antics and habits which one associates with this family.

Some other attempts were made but nothing came of them. This was the first year that I was able to rear any young ones. Softbills are very funny in this respect as sometimes they breed and other times they do not even make an honest effort. One pair of Pagoda Mynahs built a nest, but no eggs were laid and the nest was finally destroyed. A pair of Red-eared Bulbuls and a pair of Yellow-winged Bulbuls were seen carrying nesting materials but nothing came of it. All my White-eyes—two pairs of Indian, one pair of Australian (obtained from Mr. Isenberg), and a male Australian which mated with a female Indian—have never shown the slightest interest in breeding or even building a nest. Mr. Isenberg each year always rears a few and I believe this may be due to the large clumps of dwarf bamboo which he has in their aviary. The clump I have is not thick enough so this could very possibly be the reason why they have not shown the least interest.

The group of birds which fascinates me the most is the Tanager family. I find these birds full of antics besides being extremely colourful. I have at the present quite a few of these gems, but in all the time since beginning with softbills I have run across very few females. These birds should be easy to breed if one could find the hens. One pair I obtained a few years ago from Mr. William Krebs were sitting on a nest of two eggs, but as he did not want to bother with the young he broke up the nest and I took the birds. Both were in excellent condition, but after seven days the hen succumbed. For what reason I was unable to find out as the death report showed no signs of anything wrong. The pair were the lovely Golden-headed Tanager. The male passed on about six months ago and I have not been able to find another. At the same time I had one Yellow-headed Tanager which looks the exact duplicate of the Golden-headed in body, size, and distribution of the colours; the only difference, of course, was that they were not the same in colour, the former being gold on top and the sides of the head with a metallic green body and black wings, back, and tail. The latter's head is yellow, body a metallic sky-blue, wings, back, and tail black. Another very interesting one is the Blue-backed Tanager, which closely resembles and is related to Desmarest's Tanager. The difference is that the rump and front of the former is a metallic light royal blue instead of green, and the head is brick-red instead of scarlet. The little yellow band which separates the red of the head and the green of the back is not very noticeable in the Blue-backed. Also from Mr. Krebs I obtained a female Blue-crowned *Chlorophonia*, otherwise known as the Emerald Tanager. I had for years been worried about these birds, as I lost over ten after each had been in my collection for no more than two months. I finally decided to cut down on the banana and orange and that did the trick. By doing this I forced them to eat more egg food, which before they only pecked as if there was nothing else left. Now with the hen, I purchased from a dealer two young males which were coming into their adult moult; both did well and the three were together all the time. After about two years I found both the males in the pond and have no idea how they got there. Fortunately I still have the hen and a male will not be hard to procure. Also I have had pairs of the Violet *Euphonia* but was never able to keep them more than a year for the same reason as the above birds. I also have had females of the Blue, Copper-headed, Palm, Maroon, Blue-and-Black, Superb, and Pectoral *Euphonia*. Three of these I still have left to-day. Last year I was very lucky in importing eighteen of the beautiful Red-eared Tanagers from Ecuador. I have eight left after losing two and selling eight. Mr. Charles Cordier brought thirteen back with him some years ago and one of these came to the San Diego Zoo. This is where I first saw the bird and fell in love with it. This year my wish came true and not

only did I get some of these birds but amongst them were three hens. If I were an artist I would make a plate for the Magazine, as their beauty can only be appreciated if seen in life ; however, a description will have to do. To begin with we will imagine that the bird is jet black ; in size it is just a little bit smaller than the Mountain Tanager. Just behind the eye is a small crescent-shaped spot of scarlet-red, from which the bird derives its name ; in the female the shape of this crescent is smaller and not as bright. Then from just below the chest in a straight line across, through the belly and rump is the other area of scarlet-red, which again is several shades lighter in the hens. The bird also has a spot of blue at the first wing joint which shows while sitting still, but much better when flying. It is the same metallic light royal blue which the Mountain Tanager has on its wing ; also upon close inspection it will be noted that this spot of blue in the hen is not as large as that of the male. They were very nervous when they first arrived, but now have settled down and three of them will take mealworms from the hand. In the same shipment I received another Tanager which reminds one in size and shape of an Emerald Tanager only bigger. The colour is a very deep and bright royal blue all over, with the front, from the neck to the vent, canary yellow ; the wings and tail have a greenish sheen to them when the bird is sitting in the sun. I could find no description in *Aviculture*, Vol. I, to fit the bird, so I am not able to name it. I sold the bird to Mr. Jerome Buteyn and the last time I saw it it had fully feathered out and looked beautiful. I hope in future to have as many of the Tanager family as I can as they are very interesting and always full of life.

In the same shipment I received five other birds which I can find no description of in either the back issues of this Magazine or in *Aviculture*, Vol. I, or in any of the books which I have seen. These birds arrived two days before I went back to the Navy and unfortunately all I have left are the skins. I hope that as soon as I am back in civilian life I will again be able to procure some more of these birds.

The first bird was some type of giant Ant-Thrush or Ant-Pitta which belongs to the New World. Few of these birds have ever been imported because of the fact that they are hard to trap as well as hard to see in the jungle. Mr. Cordier imported some a few years ago, from, I believe, British Guiana, but these were smaller and, I remember, they were called Helmeted Ant-Thrushes. The bird that I had resembled in body that of a Pitta, only about three-quarters again as large, with a little longer tail. The head was similar and the beak was longer and musty black in colour, the feet were a dull flesh colour. The eye was light brown with a black iris. The head above the eyes, back, rump, and upper side of the tail was dark grey-blue ; the chin to the sides of the neck and three-quarters of an inch below the chin

was a light rusty or copper brown. The rest of the bird—chest, belly, vent, and underside of the tail—was the fawn colour of a fawn Zebra Finch. The chest, belly, and vent were also dotted with black spots, each spot being one-quarter of an inch in diameter and surrounded by a ring an eighth of an inch wide, of the above-mentioned light rusty or copper brown. Each dot was roughly half an inch away from the next. The bird was quite tame, but when food was placed in the cage it would pounce on it like a dog. It would eat nothing but canned dog food, mealworms, cut up raw meat, some egg food, and a few raisins.

The next two birds were the same and in size resembled a Magpie Tanager, but with a more streamlined body. They looked like a member of the Tanager family but I could not tell for sure. The beak and feet were black and the eye was scarlet red with a black iris. This was the most outstanding feature of the bird. The top of the head was black with three red feathers which began at the crown and ran back to the back of the head ; these the bird would raise a half an inch, along with the black feathers, when it became excited in any way. The rest of the plumage was a light blue-grey, more blue, which became almost black on the wings and tail. The birds were not nervous and they would eat anything put before them. They preferred soaked currants, egg food, grapes, and milk sop to anything else. I could not tell if they were young or not, but it seemed that there should have been a few more red feathers on the head instead of just the three. I should mention here that all five of these birds arrived in perfect condition without so much as a spoiled feather.

The last two were members of the Cotinga family, a cock and a hen. These birds are very rare and not easy to come by, not even in the jungle. This was my saddest loss, for there will be one chance in a hundred to replace them. The hen was an evergreen green with yellow feathers dotted over the lower chest and belly, and her beak and feet were a yellowish colour. In size she was a little larger than a Mountain Tanager. About six months before I had seen the same bird in a shipment which Mr. Ray Thomas received from Colombia and which now is in Mr. Jean Delacour's collection in Los Angeles. Upon looking through an old issue of the American *Aviculture* magazine I saw a coloured picture of a pair of Swallow Tanagers and the hen looked exactly like the two birds in every way. However, while visiting Mr. Delacour one day, and seeing the bird, I was informed that it was a hen Cotinga of some sort. The bird was in beautiful shape and seemed to be quite happy in its new surroundings. With this in mind the next bird which I shall describe could very well have been the male of the species, for it had all the characteristics of the Cotinga family. The size and shape of the body was very similar to that of a Naked-throated Bell Bird, though it was not so large. The beak and feet were



orange, like that of the bill of a Toucan, and the eye was orangeish with the black iris and a black eye cere. The whole head and neck were jet black, the back, wings, and upper side of the tail were a dark evergreen green, while the chest, belly, vent, rump, and under side of the tail a green colour like the breast of a Blue-throated Barbet, only a shade lighter. The belly, lower half of the chest, and vent were dotted with black dots which were surrounded by a very small ring of white. The dots were about half an inch apart and about three-eighths of an inch in diameter. The ring was roughly a sixteenth of an inch wide. Both birds were very quiet and were not easily disturbed upon someone entering the room; they only moved to eat, drink, bathe, and preen themselves. They would take only egg food made into small balls, a few mealworms, small pieces of cut-up apple, pear, banana, and tomato, and catonaster berries and grapes, which they liked the best.

Another shipment came to me in November, 1955, which contained three of the very rare and beautiful Apricot Cocks-of-the-Rock. These birds are larger than the Scarlet Cock-of-the-Rock, of which I have a male, but look the same in all respects except that the scarlet is replaced by a deep orange. Upon arrival two birds did not look to be in good shape. I stayed up two nights following, hand-feeding them, but on the third day one was lost. A week later one was sold after it looked to be in good condition, but it died within two weeks. The death report on both these birds showed that they had a disease in the intestinal tract which they had had for some time. The last one was liberated after two weeks in the "glass house", after the Scarlet had been transferred to the "medium size" aviary, and lived for another six weeks before it died. The bird was in perfect condition and seemed to be fine and healthy. As I was away at college I fear that the bird was not fed correctly, which caused its death. The death report stated that the lack of food had been the cause, and so, had the bird been fed correctly, it would have lived.

I have found that importing birds is not as expensive as one might think. I have also found that by shipping the birds in reinforced aluminium transport cages one cuts the air freight cost by half; this is where most of the money goes when importing birds. I also have the transport cages made collapsible so that I can send them back to the collector for the next shipment. Being able to import, one is able to get some of the rarer birds plus the ones you can buy from your dealer. Of course you are going to have losses, but if the food and water vessels are hung properly and enough food is provided and fixed so that it cannot spill on the bottom of the cage, you will eliminate another cause of death. In this way I have cut my losses down fifty per cent of what they used to be. I would also like to add that I have imported the greater part of my collection as it would have been almost

impossible for me to purchase them here in the States. On the whole the members in England and Europe can obtain foreign softbills more easily than we can here in the States. No doubt the reason is that more people are interested in softbills over there than here, but I, like others, hope that some day people here will take more of a fancy to them. One reason for this lack of interest may be that it is imagined the cost of feeding this type of bird is an expensive affair, but I think that the following might change some minds.

Much has been written by various members of the Society on the feeding of softbills and therefore I would also like to throw my hat in the ring. There are many ways of feeding and each person has his or her own idea on what is the best. I have tried to feed my birds in such a manner as to keep them in excellent condition and yet not spend a fortune on them. At present the birds are being fed by our German cook and I must say she does a better job than I do. As has already been pointed out the only live food which is given are the fruit-flies, but during the winter months this is supplemented with mealworms. Also there are other insects which are available to them in the green moss around the waterfall, off plants, and from the ground. I might add that freshly cut grass is always given to them and they seem to enjoy poring over it in search of all sorts of things.

The mainstay of their feeding is a ready prepared Mockingbird food which I buy from a dealer. This is made of one-half Spratt's Mockingbird food and one-half finely ground enriched dog meal; to this is added equal amounts of cod liver oil and wheat germ oil to make it still fairly dry, but so that each ground is well soaked in oil. Then ten pounds of dried flies are added to a hundred pounds of mixture. To this I myself add one box of pabulum and one of wheat germ cereal to each ten pounds. This dries it up a bit more and adds a few more desirable ingredients. This is fed to all the birds and is also relished by doves, quail, cardinals, and Rainbow Buntings.

The next main item which I have found to be very good, and probably most responsible for keeping my birds in good health and excellent condition, is the egg food formula mixture which I have worked out. It consists of the following :—

6	(six)	tablespoons	of	Pabulum.
6	„	„	„	Wheat Germ.
1	(one)	„	„	Powdered Grade A Milk.
1	„	„	„	Horlick's Malted Milk.
1	„	„	„	Mellin's Food.
1	„	„	„	Powdered Carrot.
1	„	„	„	Fish Meal.
1	„	„	„	Meat Meal.
1	„	„	„	Bone Meal.
1	„	„	„	Powdered Sea Kelp.
1	„	„	„	Spratt's Red Colour Canary Food.

After thoroughly mixing all the above together, five grated hard-boiled eggs are added and mixed thoroughly with the mixture. The mixture will turn out crumbly in texture and will keep in glass jars for a week if kept in the ice box. My birds prefer this mixture to anything else I feed and nothing much else is touched until it is all gone. I feed it in very generous amounts to all my birds. The last two items, colour food and sea kelp, which contains iodine, are, I think, responsible for keeping the reds, yellows, and oranges from fading during the moult. This was especially noted in the Scarlet Cock-of-the-Rock, for after four moults his colour was the same as the day I got him. Then, while away, my father ran out of both the above and the bird moulted twice before I could obtain any more. Now that it is back on the mixture the bird seems to be regaining some of the scarlet and is redder now than he was last year at this time. The same thing held true for a male Red-rumped Tanager which never lost any of the brilliant red colour of his rump after five years in my collection.

Along with the two above items the following things are also fed. A jar of peanut butter, two jars each in the two larger aviaries, is kept in front of them at all times, also a bowl of sunflower seed and raw peanuts mixed together. Soaked currants and soaked raisins, for the larger birds, are given fresh daily, as is fruit. The small birds receive fresh honey-water daily and three times a week five drops of Zymadrops and ABCD drops are added. This gives the birds much of the vitamins and minerals which they do not get otherwise. Twice a week canned dog food, a brand with no gravy, is given to all the birds. Milk sop is fed once a week during the hot months and twice a week during the colder months of the year. It is made in the following way :—

- $\frac{1}{2}$  quart of Grade A Milk.
- 2 (two) tablespoons of Honey.
- 1 (one) " " , Armour Beef Extract.
- 5 (five) drops of Zymadrops.
- 5 " " " , ABCD drops.

This is then heated until thoroughly mixed, and cooled before being fed. Every other week they receive a bowl of cottage cheese, of which they are extremely fond. Occasionally they are also given cooked peas and diced beet and carrots.

During the various seasons of the year many wild berries are to be had and a bowl is always kept full in all the aviaries. The rest of their feeding consists of fruit. Being fortunate in having a little acreage and a good climate we are able to grow some fruit trees which produce enough for home consumption as well as for the birds. We have fig, avacado, persimmon, apricot, orange, plum, peach, and nectarine trees on the place. Apple, banana, and tomato is purchased the year around, and pear, grapes, melon, and cantaloup are purchased when in season. All the fruit is eaten by all the birds, but the inhabitants

of the "glass house" will not touch plums, peaches, nectarines, melons, or cantaloup. Once a week we purchase two lug crates from the market of apples, tomatoes, and bananas, and the other fruit mentioned above when in season. This costs us seventy-five cents a week. This fruit is not saleable to the public because it is somewhat damaged but for the birds it is perfect and I have never lost one bird because of bad fruit. The fruit is kept in a separate ice box in the garage and stays perfectly good for a week.

This then is the extent of what I feed my birds. I have a little over 200 softbills and the cost of feeding them ranges from ten to fourteen dollars a month, which I feel is very cheap.

I hope that this article will be of interest to the members and that more will write on the adventures of their birds. The keeping of birds is a greatly expanding hobby and pastime and the more interest the more we can learn. As for myself, as each day passes I find out something new in the habits of the birds or how better I may take care of them. It is up to each member to support the Magazine, for I am sure that each one of us has learned much by reading its pages.

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## BREEDING TANAGERS

By R. E. B. BROWN (Newcastle, N.S.W., Australia)

At the end of the war an absolute ban was imposed by the Veterinary Authority on the importation of all birds into Australia, for fear of the introduction of Fowl Pest, or Newcastle Disease. This is said to be widespread in the world, but has never occurred in Australia. The ban, coming when it did, at the end of the war, found our aviaries much depleted with regard to foreign birds as, of course, none had been imported during the war. Although I am of the opinion that Australian birds are second to none, both in beauty and interest, it is sad to be cut off from many old friends among the foreigners.

At the time I had three red Tanagers, a pair of Scarlet (Brazilian), and a hen Maroon, so I thought I would try to breed a domestic race of these birds. In this I have had some success. I have now bred them to seven generations, and have four main kinds, pure Scarlet, obvious hybrids, Maroon with a dash of Scarlet, and Scarlet with a dash of Maroon. I have others showing various degrees of mixed blood. The hybrids are very beautiful birds.

I first paired the Scarlets together, and next summer mated their son to the hen Maroon. A point of interest is that I successfully mated him before he came into colour; he had white patches on his beak, but was quite brown. The hybrids are fully fertile, and Maroon is dominant over Scarlet. The Tanagers are all perfectly tame with people they know, but it is surprising how they can distinguish strangers.

These birds are kept in open garden aviaries with natural trees growing in them, and no other shelter is necessary in this climate ; I have never been able to persuade them to go to nest in anything but a living natural tree. They will live in small aviaries, but will not breed, and they do not look well in them, and tend to lose their bright red colour. The smallest aviary I have ever successfully bred them in is 18 feet long, 6 feet wide, and 6 feet high, with a privet tree at one end and a shelter at the other. But they do much better in larger aviaries ; the larger the better. My largest is 25 feet long, 15 feet wide, and 12 feet high. When breeding only one pair of Tanagers can be kept in an aviary, but they do not interfere with other birds.

My birds are fed on softbill mixture to which freshly grated hard-boiled egg is added to the daily ration. Fruit is, of course, essential, and I always provide banana, apple, pear, and orange, and paw-paw, grapes, and mangoes, etc., in season. In a country where fruit is hard to get, banana and one other fruit would be enough, but the birds should always have green food, grit, and crushed egg shells. They should also have insects daily. They like white ants themselves, but will not feed the young on them.

I think I should describe the breeding of these closely related species together, merely mentioning the differences. They both build cup-shaped nests of grass, small twigs, teased rope, and cotton wool. They often place broad leaves on the bottom of the nest. The Scarlet builds a very strong nest, the Maroon a much weaker one. I get over this by giving the hen Maroon some cotton wool, noting where she puts this, and placing a wire gauze shape at the *exact* spot where she wants to build. Nearly all hens will go ahead and build in the wire shape.

The eggs of both species are blue with reddish-brown spots, the Maroon eggs being smaller ; the Scarlet often lays three eggs, the Maroon never more than two. Incubation for both is twelve days. Whilst the young are in the nest live food only is given, and most of the feeding is done by the hen. The young are coloured like the hens. They always leave the nest on the twelfth day ; they cannot fly well at this stage, but are able to hop about in the trees. As soon as they leave the nest the parents start giving them banana and soft food as well as the live food.

The live food given should be varied as much as possible, the parents will not give the young white ants at all, but demand larger insects. I have on one occasion reared a nest of Scarlets on mealworms alone, but much better specimens are reared if a variety is given. Some hens flatly refuse to feed two days running on the same insects, but simply demand a variety. My old Maroon hen, now 19 years of age and still breeding, does this. I use mealworms, casemoth grubs,

grasshoppers, mantins, crickets, spiders, and the large green grubs found on privet trees, and sweet potato vines (the latter must be cut up). The green foods most relished are thistle buds and fresh lettuce.

The young are not independent of the parents until three weeks after leaving the nest ; they must then be caught up or they will interfere with the next clutch. The Scarlet Tanager cocks come into full colour when 12 to 15 months old, and the Maroons 10 months to two years.

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## BREEDING THE SUPERB PARROT IN CALIFORNIA

(*Polytelis swainsonii*)

By DAVID WEST (Montebello, Calif., U.S.A.)

The breeding of three young Superb Parrots in 1955 and three again in 1956 in California has been something of an avicultural triumph. Doubtless members in Europe will not feel this is a very accurate and warranted statement, but it is now some fifteen years since this beautiful species has been bred in the United States.

Probably I ought to say that the term "Superb" is not very frequently used in describing *Polytelis swainsonii* and Barraband's is the more commonly used name. But I have always felt that the appellation "Superb" is wonderfully accurate for this species. The beauty of plumage and elegant shape, accompanied by its winning ways, make it a favourite.

The only other recorded breeding of the Barraband's or Superb Parrakeet in the United States is the record by Mr. I. D. Putnam, in San Diego about 1940. The late Mr. Putnam told me that three young were reared from this breeding. One young from this breeding was a tame male which Mr. Putnam kept for a pet ; later it passed into the hands of Mrs. Hubbell, of San Diego, and was the father of the young hybrid Barraband's  $\times$  Rock Pebbles she raised a few years ago.

It is odd that this species has proved to be so difficult to breed here in America. They are easily kept in good health and always appear to be happy and contented, but somehow they just don't nest. However, hybrids between male Superbs and female Crimson-wings were reared on several occasions by the late Dr. Ralph Woods and they were exceptionally beautiful birds. These hybrids all appeared to have been sterile when mated back to parents or *inter se*.

My own pair did not nest in 1952, 1953, or 1954. In each of these years the pair were obviously in breeding condition and matings and feedings were observed, but they never settled down to an actual nesting.

During 1955 and 1956 the male came into breeding condition slightly

ahead of the hen. Male Superbs display spasmodically throughout the year and their display is not unamusing. Beginning in March, the male began calling and displaying to a rather bored and uninterested female. This process continued and late in March the female became more receptive and interested. Very suddenly, in April, the female allowed the male to feed her very frequently and invited pairing. Even so, she had not visited either nest-box and did not seem to approve of either the grandfather-clock nest or the smaller box. In late April, following a period of about ten days where pairings took place several times a day, the female entered the smaller of the two boxes provided and began nesting. Incubation apparently began with the first egg and from that time until the young were about two weeks old the hen was observed only twice. She was a perfect prospective mother and did not leave the nest when I entered the aviary to replace food, etc.

During the incubation period the male would visit the nest-box and feed her. At this time the squeaking sound the hen would make when she was being fed by the male could be heard. The nest-box chosen was about 18 inches wide, 18 inches deep, and 18 inches tall—and so it was sufficiently roomy to permit the male to enter and easily feed the hen without the danger of scattering or breaking the eggs.

The sound of young being fed was heard on the twenty-second day after incubation started. From about the third day following this the male began to enter the nest and to (apparently) feed the young as well as the hen. As Superbs are good-sized birds the male was observed spending an unusual amount of time eating to provide the necessary food for the family. Fruit, as apple and orange were appreciated, and fresh corn on the cob was also devoured. Greens, as *poa annua* or grass clippings, and the berries of the *pyracantha* were also given. Soaked bread was given in the morning and again in the evening and seed was scattered on the aviary floor where the earth's dampness caused some of it to sprout.

The aviary the parents occupied was 17 feet long, 3 feet wide, and 8 feet tall. A shelter at one end was provided for inclement weather—which we do have in California! The nest-box was hung at the edge of the shelter and faced north. Rough wood chips were used as nesting material. A large stick was placed just below the entrance to the nesting-box and the male seemed to enjoy sitting on this perch and talking to his mate inside the nest every now and then. He would occasionally fly to the box, look inside, and then fly away—satisfied that all was well.

The youngsters prospered and the mother bird brooded them very closely for the first two weeks. An observation of the nest revealed that three of the four eggs had hatched and that the young were developing nicely. About the end of the third week a second look revealed that either the mother or the father were picking the feathers

on the back of the babies. Since the guilty parent was unknown and the picking was not dangerous nothing was done other than to keep hoping !

About the end of the fifth week the first two youngsters came out of the nest. They were strong on the wing and quite steady, but looked very unattractive because their backs were all feather-picked. The third youngster left the nest three days later and from the very minute she left the nest the mother began to pick her back so severely that the youngster would bleed. Neither parent would try to feed the third youngster once she had left the nest (for it was a young hen) and so this baby was taken to a friend who very kindly offered to hand-feed it for a few days until it was on its own.

Eventually all three of the young Barraband's or Superbs were placed together in an aviary where they have done very well. At this time (November) they appear to be two cocks and one hen—though no definite red feathers have come in on the youngsters thought to be cocks. The feathers on the back have grown in and one could not, at this time, tell that they had ever been picked.

I should like to add that Mr. G. Rayson Brown was also successful with this species during 1955 and 1956, rearing four youngsters in 1955 at about the same time my breeding took place and three youngsters in 1956.

If anyone could throw any light on the reason why the female picked the youngsters I should appreciate the information so that a recurrence could be avoided. From past experiences with this type of thing I have had females pick their youngsters one year and then skip two or three years. It certainly is an interesting problem and probably not too akin to the same problem in Budgerigars, because these larger birds do not over-nest (would that some of them would !).

It is interesting to note that the Barraband's in my collection and also Mr. Brown's have been old enough to nest for several years, but not until this year did they attempt to do so. Now one can only hope that other reluctant species will follow their lead.

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## THE BENGALESE FINCH

By ERICA EISNER (Oxford, England)

The Bengalese is well known as one of the hardiest and easiest to breed of the weaver-finches (*Estrildinae*) commonly kept in captivity. It is now also showing itself to be an excellent animal for laboratory study. The most frequent type is a piebald of brown ('chocolate') and white, and fawn and white birds are also common. Pure white birds have been bred for a long time, but it seems to be more recently only that 'self-coloured' browns and fawns have been noted. Judging by advertisements and the statement in a recent book (Risdon, 1953) that "I have never seen or heard of a self-coloured chocolate or self-coloured fawn", these seem to be not yet well known.

The classification into piebalds and self-coloureds is in fact quite arbitrary, for there is an unbroken gradation from birds with no white feathers through piebalds of different degree to birds with no coloured feathers. The ancestral bird was surely not a piebald or a pure white, but a self-coloured bird; this is not only obvious of itself, but there is evidence for it. Taka-Tsukasa (1922) quotes a description of the original Japanese stock, which apparently had no plain white feathers.

Wild birds with an odd few white feathers are not rare, but it would seem that natural selection keeps this tendency towards piedness suppressed, so that the normal type is maintained. A reasonable explanation for this is that birds showing clear patches of white feathers are more conspicuous than normals, and therefore more likely to be killed by predators. In captivity, a bird which had white feathers would not only not be eliminated, but would probably be cherished as a rarity and used for selective breeding. According to Taka-Tsukasa, the white Java Sparrow was produced in Japan from grey birds with white feathers in their wings. It seems most probable that the Bengalese was developed similarly.

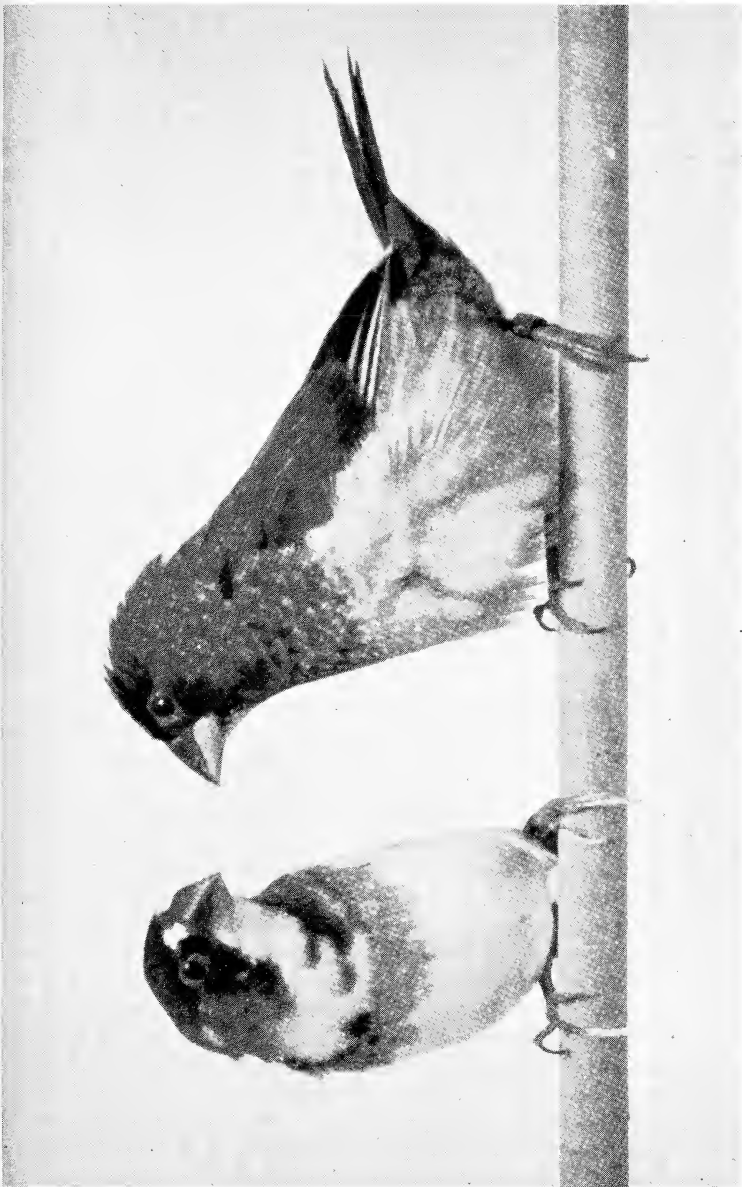
The genetics of variation in the amount of white shown has not been worked out in the Bengalese, and as it undoubtedly depends upon a multiplicity of genes it would probably be extremely difficult to do so. Such is certainly the case in the mouse. Although that animal has been the subject of a vast amount of genetical work, it is only in recent years that much progress has been made in the analysis of 'spotting', i.e. of the variation in the distribution of white areas. Like that of all products of long-continued selective breeding, as Grüneberg (1952, p. 65) says, the genetics of spotting in the mouse is very complex. There is little reason to hope that the Bengalese provides an exception. On the average, the offspring of any pair of these birds tend to be intermediate in piedness between their parents,

but exceptions to this rule are frequent. I have no experience of pure white birds, but self-coloureds can be obtained by careful selection from pairings of birds having few white feathers.

In contrast to the complex problem of the genetics of piedness, that of the alternative colours is simple. When a bird has coloured feathers they are either brown or fawn, and these colours are mutually exclusive. Indeed, it is not only the plumage which shows this, for fawn-feathered birds have fawn pigment on beak and legs, and newly hatched chicks which will later grow fawn feathers have fawn coloured mouth markings and eye-balls, while future browns have the mouth markings and eye-balls dark. Incidentally, the mouth markings reflect also, though not so reliably, the future degree of piedness: self-coloureds have the complete horseshoe pattern characteristic of the Mannikin group of the Estrildines, but future piebalds have it disrupted to a degree correlating roughly with the disruption of the plumage pattern they will later show.

It is altogether evident that the genetic character of 'fawn' is a simple Mendelian recessive to that of 'brown'. Two fawn birds mated together will invariably produce fawn offspring, and no browns. Two brown birds which are known to have had no fawn birds in their ancestry will likewise be true breeding, but brown birds can carry the factor for fawn without its being evident except from the results of breeding tests. A pure brown mated to a fawn will produce only brown offspring. If these are then mated to each other, approximately one quarter of this second generation will be fawn; if they are mated to fawn birds about one-half of the offspring will be fawn. If a pair of brown birds breed occasional fawn young, then they must both carry the factor for fawn; if only one of a pair of brown birds has the fawn factor then that pair will never produce fawn offspring. Again, it is most probable that some wild birds do carry such recessive colour factors, but the chances are against their mating with another bird which also carries it. If this were to happen, the unusual offspring would probably have a smaller chance of survival than the normal type. In captivity, however, such recessive characters rapidly become more common by inbreeding and selection.

My aim in the foregoing genetical discussion has been to clear the ground for a discussion of the ancestry of the Bengalese, which has so far constituted a very vexed question. Some accounts (e.g. Risdon, 1953) say that the breed originated in Japan, but more cautious authorities say only that it has been bred for many years in Japan, or is often bred in Japan (e.g. Neunzig, 1921). Taka-Tsukasa (1922) gives the most informative account of the history of the Bengalese. He says that according to an old Japanese book on cage birds, the original stock was imported from China "about 200 years ago". He does not say whether these were wild birds or an already domesticated stock,



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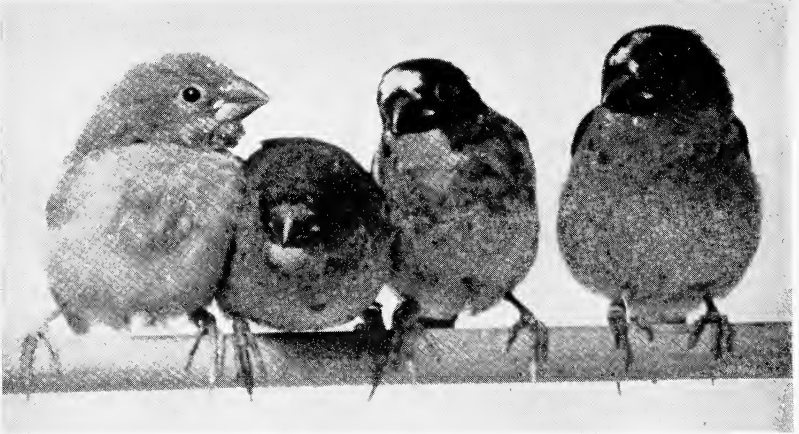
[D. J. Morris

BENGALESE FINCHES

(about life size).

A self-coloured male Bengalese courting a pied female. This shows in particular the slight markings on the belly feathers where these are not pure white.

To face p. 102.



*Copyright]*

*[D. J. Morris*

FIG. 1.—BENGALESE FLEDGLINGS.

The bird on the left is a perfect self-coloured fawn, while two of the brown birds may be classed as self-coloured, although they have a few white feathers—the male of Plate (1) is one of these. Such a simple juvenile plumage is shown by many mannikins ; the dark upper parts and light belly are differentiated at about three months old.



*Copyright]*

*[J. S. Haywood*

FIG. 2.—SKIN OF BENGALESE FINCH.

This shows especially the light edges of the breast feathers and the sharply pointed tail.

*To face p. 103.*

but gives a description of the original species and says that the white and fawn varieties appeared considerably later. It may therefore be said that the Bengalese breed as we know it to-day originated in Japan, but from non-Japanese ancestors. The latter part of this statement is necessary also because no possible ancestral species occurs wild in Japan.

What, then, was this ancestral stock? It is quite obvious, and generally recognized, that the Bengalese resembles the Striated and Sharp-tailed Finches more than it does any other. However, it is nowadays quite generally, at least in this country, supposed to be some kind of hybrid of these types and possibly also the Silverbill; no evidence is ever given for this view.

Probably, the present acceptance of this hybrid theory stems from the preference of Dr. Butler (1894) for it. In the first two decades of this century, though, this view was frequently contested, and even Butler himself (1907) decided against a hybrid origin. The Bengalese was then usually thought to be a domesticated strain of the Sharp-tailed Finch. For instance, the reviewer writing on p. 112 of the *AVICULTURAL MAGAZINE* for 1902-3 says: "Domestication is also responsible for . . . and white and pied forms (Bengalese) of the Sharp-tailed Finch. We perfectly agree . . . that there is no reason for supposing the latter birds to be hybrids." Recently, Steinbacher and Wolters (1956) have written that it is certainly wrong to suppose that the Silverbill (p. 119) is an ancestor of the Bengalese which they think is most probably a domesticated Sharptail (p. 142), but they do not discuss the matter. I hope to give convincing evidence that this is the correct view.

Possibly the Silverbill was suggested as a part ancestor in order to explain the occurrence of fawn individuals, for the Silverbill is fawn though of rather a different shade. The knowledge that fawn colour is a mutant inherited in a perfectly normal way makes such an explanation altogether unnecessary, and there is no evidence supporting it. Indeed, if their statement is well established, Steinbacher and Wolters give the strongest possible evidence against the view that the Silverbill is an ancestor of the Bengalese. They state (p. 152) that although the Bengalese produces fertile hybrids with some Mannikins, hybrids between the Bengalese and the Silverbill are sterile. However, especially as elsewhere (p. 119) they suggest that a hybrid between the Sharptail and the Silverbill can be fertile, this point should be checked.

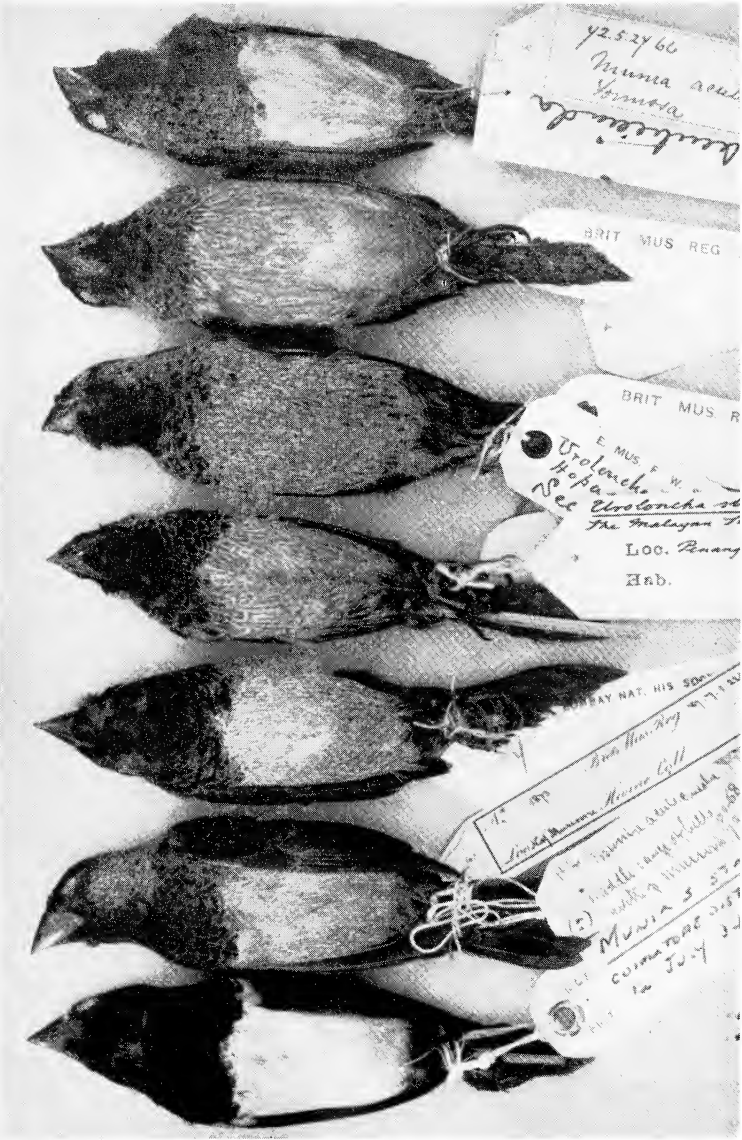
The Striated and Sharp-tailed Finches are considered to be members of the same species, *Lonchura striata*. (I use the generic name *Lonchura* after the most recent revision, that of Delacour (1943), although the names *Munia* and *Uroloncha* are more frequently applied.) The suggestion that the Bengalese is a hybrid of the Striated and Sharp-tailed Finches (and these do hybridize freely, according to Hopkinson, 1938) is both unnecessary and contradicted by the evidence. A

detailed account of the species is given by Stuart Baker (1926). There are two sub-specific groups which are distinguished on various grounds, the most obvious of which is the occurrence of 'lace markings' or squamations on the belly and rump feathers. The one group, native to Ceylon and India, forms the Striated Finches; the other, distributed from Nepal and Bengal to Malaya and China, consists of the Sharp-tailed Finches. My descriptions are based not only on those given by Stuart Baker and others, but also on my own examination of the collected skins in the British Museum of Natural History.

In all birds of the species the head, breast, back, wings, and tail are brown, while the belly and rump are lighter. In the Striated Finches the brown is very dark, tending to be almost black on the head and breast; the belly and rump are almost white and contrast markedly with the dark regions, especially as they show no squamations. The tail is not especially pointed, and is rather shorter relative to body size than in the Sharp-tailed Finches. The Sharptails have much less contrast between the dark and the light regions than do the Striated Finches. The brown tends to be of less deep a colour, and of a rather more reddish shade (this is not altogether clear in Stuart Baker's description, but is stated clearly by Vaurie (1949) and I have confirmed it). The appearance is further lightened because the central shafts of the brown feathers are much more conspicuously pale than in the Striated Finches, and because the edges of the breast feathers are outlined in a lighter shade. This last character is not shown by the Indian and Andaman Striated Finches but is shown by the Nicobar race. This race does, however, agree in all the other distinguishing characters, and also its limited distribution makes it unlikely to be relevant to this argument. The ground colour of the belly and rump is slightly darker in the Sharptails than in the Striated Finch; specimens from different regions show squamations to a varying extent, and where these markings are prominent they give a grey effect. The tail, as the name implies, is very sharply pointed: each feather individually is pointed and there is a marked gradation in length towards the central, longest, feather.

How, then, does the Bengalese compare with these wild birds? The easiest comparison to make is between them and a self-coloured brown Bengalese, and it is immediately obvious that this is quite different from a Striated Finch, as from all other species, but resembles some Sharp-tailed Finches greatly. The brown colour is not as dark as that of the Striated Finches, but has the same tone as that of the Sharptails; the belly and rump do not contrast strongly, and bear squamations. The tail is beautifully pointed. The shafts are prominent on the brown feathers, and the breast feathers have light edges. All these characters can also be seen on the brown and white piebalds, though of course there is no such striking general impression of





[J. S. Haywood]

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STRIATED AND SHARP-TAILED FINCHES

(about  $\frac{2}{3}$  natural size).

From left to right : Striated finch from Madras, India ; Sharptails from : Mussoorie, Nepal ; Henzada, Burma ; Penang, Malaya ; Szechuan, China ; Fukien, China ; Formosa.

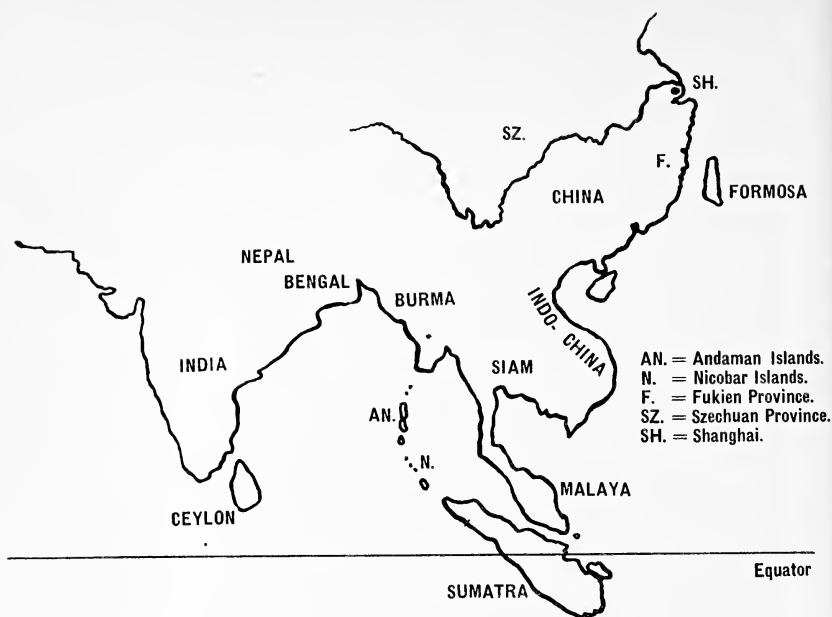


similarity. As long as one remembers that the white feathers of the piebald are superimposed upon the characteristic species plumage pattern, it is obvious from examination of the feathers that the Bengalese is a tame Sharp-tailed Finch, and does not have the characteristics of a Striated Finch or any other species.

Unfortunately I have not been able to compare the Bengalese with living Sharp-tailed Finches, as these are not freely on the market. Dr. Desmond Morris (unpublished) has compared the behaviour of the Bengalese with that of the Striated Finch, and with other species of Mannikin, in detail. He found that the behaviour patterns of the Bengalese were essentially the same as those of the Striated Finch, while differing from those of the other species. It is especially noteworthy that the Bengalese has no behaviour components characteristic of the Silverbill, whose behaviour is very clearly distinct from that of the Striated Finch. It is a pity that we do not know how far, if at all, the behaviour of the Sharp-tailed Finch differs from that of the Striated Finch; one would expect that any difference which may exist would be very slight. Mr. William Bain, vice-chairman of the National Bengalese Fanciers' Association, wrote to me that "the Sharp-tailed Mannikin closely resembles the Bengalese in shape, size and mannerisms".

I think there can be little doubt that the Bengalese is a domesticated form of a Sharp-tailed Finch, i.e. that it is a member of the *acuticauda* subgroup of *Lonchura striata*. This view has frequently been expressed in the past, and I believe the evidence necessitates its acceptance in place of the theory of hybrid origin. It is less easy to say from where exactly the ancestral stock must have come. The most comprehensive account of the *L. s. acuticauda* group, that of Stuart Baker (1926), is rather unsatisfactory. This account recognizes three subspecies: *L. s. acuticauda* itself from Nepal and Bengal, *L. s. subsquamicollis* from Burma, Indo-China, Malaya and Sumatra, and *L. s. squamicollis* from China. The distinction depends largely on two characters: the nature of the light edges to the breast feathers, and the strength of the markings on the belly feathers. However, as so often happens, the natural populations do not fall clearly into separate groups, but instead there seems to be a continuous change between one area and another; such continuous change can never be shown by the usual type of classification.

The majority of the British Museum specimens from the Indian end of the range are admittedly like Baker's *L. s. acuticauda*, which is described as having breast feathers with rufous edges and only faint squamations. Similarly, birds from peninsular Siam and Malaya have strong squamations and conspicuous pale edges to the breast feathers, in accordance with the description of *L. s. subsquamicollis*. But birds from areas in between, such as Burma, are quite clearly



South-East Asia : The region in which *Lonchura striata* occurs wild.

intermediate. Baker's description becomes much more seriously inadequate for birds from regions eastwards of Indo-China, for it does not suggest that there is a comparable trend of change across China. The description of *L. s. squamicollis* applies well to birds from the West China province of Szechuan. These have very heavily marked belly feathers and very clearly defined broad pale edges to the breast feathers, which are of a yet lighter brown than those of the other sub-species. This characteristic type of breast feather is shown by all specimens from China but birds from the east coast provinces, especially Fukien in the south-east, again have less strong squamations. The belly feathers of these birds are comparable to those of specimens from lower Burma, but their brown feathers are distinctive in being considerably paler. Birds from Formosa have even less clear squamations, and also their brown feathers are of a slightly richer tone than that of the Chinese mainland birds; this has previously been pointed out by La Touche (1925), and Oberholser (1926) has even created a subspecies for the Formosan type of Sharptail. The Formosan specimens are in fact extremely similar to birds from Nepal, the only reasonably apparent difference being in their having slightly more conspicuous pale edges on the breast feathers.

The Bengalese clearly does not resemble the birds from the central part of the Sharp-tailed Finch's range, for it never has such strong squamations. The common name of 'Bengalese Finch' might be considered as circumstantial evidence of origin from the Bengal area, but this would be extremely unreliable. The name 'Bengali' was originally applied to the Cordon-bleu from Africa and may have been a corruption of Benguela. It was later used indiscriminately in the bird trade for many of the weaver-finches, and was then restricted to the Pied Mannikin as a result of Dr. Butler's influence (Flower, 1906). It would be interesting to know what the Japanese vernacular name for this bird signifies. It seems much more likely that the ancestral stock came from South-East China and/or Formosa. Taka-Tsukasa says that the original Japanese stock came from China and that the feathers of the abdomen were "white with pale, dusky streaks". Amongst my own stock of Bengalese, comprising over a hundred birds, the intensity of these streaks is rather variable, but seems to be usually less strong than that of the Fukien specimens while stronger than that of specimens from Formosa, to which that province is nearest. Specimens from other parts of China, whether from the Shanghai region further north along the coast or westwards, all have too strong markings. As the breast feathers of the Bengalese are clearly of the Chinese type, with conspicuous pale edges and of a rather pale brown, I think it must be concluded that the ancestors of the Bengalese most probably came from this South-East China region.

In summary, the Bengalese is a domesticated form of Sharp-tailed Finch which was developed in Japan from stock probably originating in South-East China or Formosa. There is no reason whatsoever to suppose that it is a hybrid of the Sharp-tailed Finch with any other bird.

#### ACKNOWLEDGMENTS

I am most grateful for the help given me by Mr. J. D. Macdonald and the staff of the British Museum Bird Room, and by Mr. W. Bain and Mr. N. Tolmaer of the National Bengalese Fanciers' Association. I would like to thank especially Dr. A. J. Cain and Dr. D. J. Morris for their encouragement and advice, and Dr. Morris and Mr. J. S. Haywood for the photographs. I am extremely indebted to the Nuffield Foundation to whom I owe my apparatus and birds.

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## LONDON ZOO NOTES

By J. J. YEALLAND

A White-necked Picathartes has been received from Sierra Leone as a present from Mr. J. I. Menzies who hand-reared the bird from a nestling. He fed it on small frogs, lizards, mealworms, grasshoppers, insectile food, and minced lean meat. It is now living with the one collected by the first "Zoo Quest" in 1954, and is, of course, only the second living specimen to be brought from Africa. Like the first specimen, this young bird has several filoplumes on the top of the otherwise bald head. The Grey-necked Picathartes brought by Mr. Webb from British Cameroon during 1948 continues to thrive.

Other gifts are a Citril Finch from Mr. W. Schenck, two White-throated and one Red-throated Humming Birds from Mr. Randau, an Indian Broad-billed Roller and a Loo Choo, or Lidth's Jay from Messrs. Brooke Bond and Co., a Fohkien Grey-headed Crow-Tit from Mr. G. H. Newmark and a small number of various insectivorous Indian birds, of which a Black-naped Oriole is the most noteworthy, from Mr. C. E. Engledew.

A fine Masai Ostrich has been received in exchange from the Bristol Zoo and a Pileated Kingfisher has been deposited.

The Cormorant hatched on about the 20th of February is now fully grown and flying. A second nest has been built and probably contains eggs. A Gannet's egg is being incubated in the same aviary.

Three Black-footed Penguins, five blue-bred green Masked Lovebirds, and two Cockatiels have been bred. Four Swinhoe's Pheasant chicks have been hatched and are being reared by the parents which successfully reared two last year. It is a pity that this handsome pheasant is

not more widely kept, for, like the Mikado, it is found only on Formosa and may be in danger of extinction there.

Great Eagle-Owl, Spotted Eagle-Owl, Maned Goose, and Impeyan Pheasant are the most noteworthy of the birds now incubating eggs. The "Homing" Budgerigars are, of course, breeding, not all of them in the boxes provided, for several pairs are nesting in the trees about the Gardens and in Regent's Park.

The Reeves deposited by the Norfolk Naturalists' Trust last autumn have now been sent to the Cley marshes.

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## BRITISH AVICULTURISTS' CLUB

The fifty-seventh meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Wednesday, 8th May, 1957, following a dinner at 7 p.m.

Chairman : Dr. E. Hindle.

Members of the Club : Miss P. Barclay-Smith, Hylton Blythe, A. W. Bolton, Miss K. Bonner, K. F. Clarke, W. D. Cummings, J. D'eath, Squadron-Leader C. Everitt, Mrs. C. Everitt, Miss R. Ezra, Miss S. A. Fothergill, H. J. Harman, Miss S. I. Hobday, F. E. B. Johnson, Miss E. M. Knobel, Miss M. H. Knobel-Harman, E. C. Lewis, Mrs. E. M. Lonsdale, S. Murray, K. A. Norris, C. M. Payne, A. A. Prestwich, D. M. Reid-Henry, R. C. J. Sawyer, D. Seth-Smith, P. Sutton, Mrs. R. Upton, E. N. T. Vane, C. H. Wastell, Mrs. C. H. Wastell, Mrs. G. Wheatley.

Guests : Mrs. K. F. Clarke, S. A. Croucher, Mrs. S. A. Croucher, T. E. Lewis, Miss D. G. Lonsdale, Mrs. S. Murray, Mrs. C. M. Payne, Mrs. D. Seth-Smith, Mrs. P. Sutton, Mrs. E. N. T. Vane, Miss F. Wood, W. A. Wood.

Members of the Club, 32 ; guests, 12 ; total, 44.

Mrs. Rosemary Upton showed slides to illustrate "Some Shetland Birds". But let it not be supposed that this was just another talk on the Islands' birds, illustrated by the inevitable series of slides of little interest to anyone other than the photographer.

Mrs. Upton revisited the Shetlands in May-June, 1955, with the express purpose of photographing the Whimbrel and its nest. In this she succeeded admirably, and procured a fine series of photographs of a pair of nesting birds and a complete record of the hatching of four chicks. The time from when the first egg started to that of the last chick leaving the nest was 46 hours—no less than 32 of which Mrs. Upton spent in observation. We were also shown excellent pictures of the Great Skua and its nest, Arctic Skua, Dunlin, Red-throated Diver, and others. Enjoyable though the pictures were, the

speaker's amusing description, enhanced by humorous sketches, of how they were obtained, greatly added to the enjoyment. Altogether it was a very happy blend of scientific information and enjoyable narrative.

E. N. T. Vane deserves a special credit for the efficient way in which he handled the projector.

ARTHUR A. PRESTWICH,  
*Hon. Secretary.*

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## NEWS AND VIEWS

The Bronze Medal of the Avicultural Society of South Australia has been awarded to C. C. Burfield, for breeding the Red-backed Quail, and to H. J. Hutchinson, for breeding the Black-fronted Quail.

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An overseas visitor recently exclaimed, "Why, there's the Magazine, all in one row, I never saw that before!" Actually, it is not in one row but in three; the 62 volumes occupying 7 ft. 2 in. of shelf space—18 volumes, 20 inches, to the credit of our present Editor.

\* \* \*

Frank A. Hartman, of the Ohio State University, writes: "I kept a pair of Sparrow Hawks in a cage in the laboratory for more than ten years. The female laid eggs and incubated them, but they never hatched because apparently they were not fertile. These birds were taken from the nest and kept in a flight-cage throughout life."

\* \* \*

Mrs. Jean Warner, Ibadan, Western Nigeria, writes concerning Red-faced Lovebirds: "You say the flight-feathers of imported birds are invariably ruthlessly cut, but this is also true when one purchases birds from itinerant Hausa traders. In some cases too, the banded tail-feathers are extracted and used as a juju (native charm), and the same applies to the red tail-feathers of the Grey Parrot."

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G. A. Gjessing, Drammen, Norway, reports an interesting event. In January his Rock Pebblers started to lay on the ground of the flight. The egg was put in a box on the ground and three further eggs were added to it. On the 10th February the first of three chicks was hatched, and all three, possibly one male and two females, are now fully independent. The temperature during this time was down to 20° F. in the heated shelter and about 0° F. outside.

Preliminary reports : E. J. Boosey, Senegal Parrots sitting on four eggs : “ *Darenth-Hulme*,” Pied Imperial and Green Imperial Fruit Pigeons have laid several eggs, but only one pair of Pied is sitting in earnest : Major V. Dilwyn Jones, Red-bellied Conure, three young ones in the nest and three eggs still to hatch : Kenneth Russell, Senegal Parrots, two eggs failed to hatch, contained well-developed embryos.

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Some of our members do not seem to be familiar with the universally accepted rules governing the publication of notes and papers. When a writer submits a paper to a journal for publication, it is understood that he has not submitted it to any other journal, and will not do so unless it is rejected by the first recipient.

Our Editor has recently received several items it was intended to publish, only to find them appearing in other publications. Editors generally do their best to prevent duplication, but such is occasionally beyond their endeavours, and the same paper appears in more than one journal. We trust our contributors will lessen our Editor's worries by submitting only original matter.

A. A. P.

\*            \*            \*

## REVIEWS

**BIRD WONDERS OF AUSTRALIA.** By A. H. CHISHOLM. Fourth edition revised and enlarged. Angus and Robertson, London, 1956. Price 25s. net.

As the author states in the preface, this is not intended as a text-book of Australian birds, but its purpose is to present a factual, gossipy account of the “ Believe-it-or-not ” features of Australia's remarkable bird life. The book is divided into two sections—Biographical and General—and in the first part all the outstanding groups of Australian birds have been dealt with. Aviculturists will find much of interest concerning the habits in the wild of the birds they have known only in captivity, and many will wish that the chapter “ The Land of Parrots ” had been longer. Though admittedly a popular book, it contains a wealth of information, and many problems are explained in a clear and concise manner. To quote the titles of some of the chapters in the second section—“ Good neighbours—sometimes (a study of the relations of birds and man in Australia) ” ; “ Queer relations of birds and insects ” ; “ Carrying the baby in birdland ”—give some idea of the diversity of aspects of bird life the author deals with. The final chapter, “ To settle an argument,” is devoted to

discussion of various questions concerning birds which have been raised by correspondence during the author's conduct of Nature columns in various newspapers. There are 64 photographic illustrations and a coloured photograph frontispiece.

P. B-S.

**SOME COMMON AUSTRALIAN BIRDS.** By ALAN BELL with drawings by SHIRLEY BELL. Published by the Oxford University Press. London, 1956. Price 35s. net.

This small handbook contains descriptions and illustrations of just over a hundred of the 650 or more birds native to Australia. As the author states in his introduction, the book is designed to help people in the more closely settled parts of Australia to recognize birds they may see at home in the garden or during a day's outing. In each species the range and salient points of its appearance on a brief view is given, and followed by more detailed description and an account, in somewhat picturesque language, of habits, behaviour nest, etc. The illustrations have been executed with the aim of giving an impression which will help in quick identification. Some are good but others are out of drawing. Eleven species of the Parrot family have been included, but the illustrations of some of these are not very happy.

B. B. F.

\* \* \*

## NOTES

### SONG OF VIOLET-EARED WAXBILL

I feel I owe an apology to the charming little Violet-eared Waxbill for saying in my book, *Foreign Bird Keeping*, that it has nothing much in the way of a song. When I wrote this I had not kept the species since before the war, and I still cannot remember that the male of a pair in breeding condition we then had was much of a songster—but it is a long time ago ; I should say about 1935.

Now, however, we have a pair that have just gone to nest, and the exquisite beauty of the cock is quite matched by the beauty of his song.

When one thinks of small foreign seed-eating songsters one's thoughts naturally turn to members of the Serin family and chiefly perhaps to the well-known Green and Grey Singing Finches—both delightful songsters—particularly the latter.

Waxbills, on the other hand, are not remarkable for their song, so it is all the more unexpected that the Violet-eared should have such a fine one. Its song, though perhaps rather more varied, is remarkably like that of the Skylark, and if it had the same astonishing volume in relation to the bird's size as is the case with the Grey Singing Finch, I have little doubt that it would be acknowledged as one of the finest songsters of all the small seed-eaters.

EDWARD J. BOOSEY.



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The eighty-seven Candidates for Election in the March-April, 1957, number of the AVICULTURAL MAGAZINE were duly elected members of the Society.

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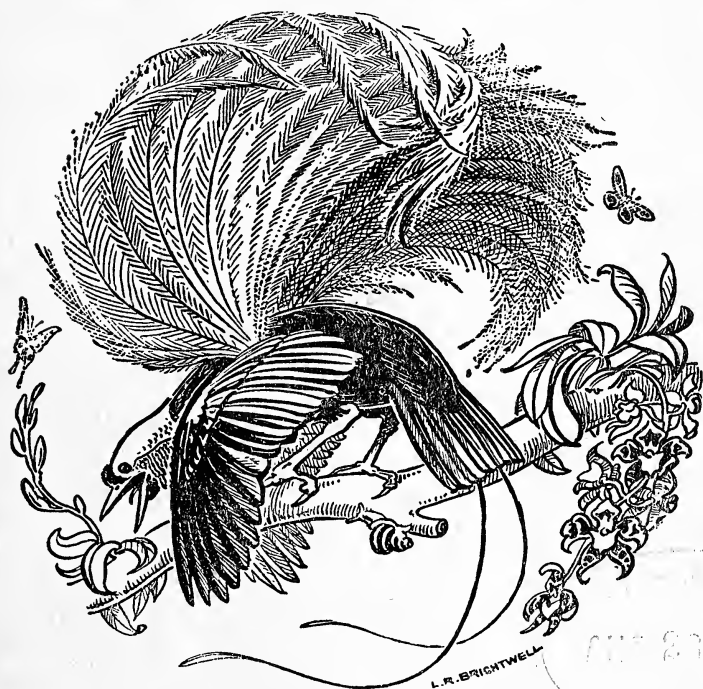
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# AVICULTURAL MAGAZINE



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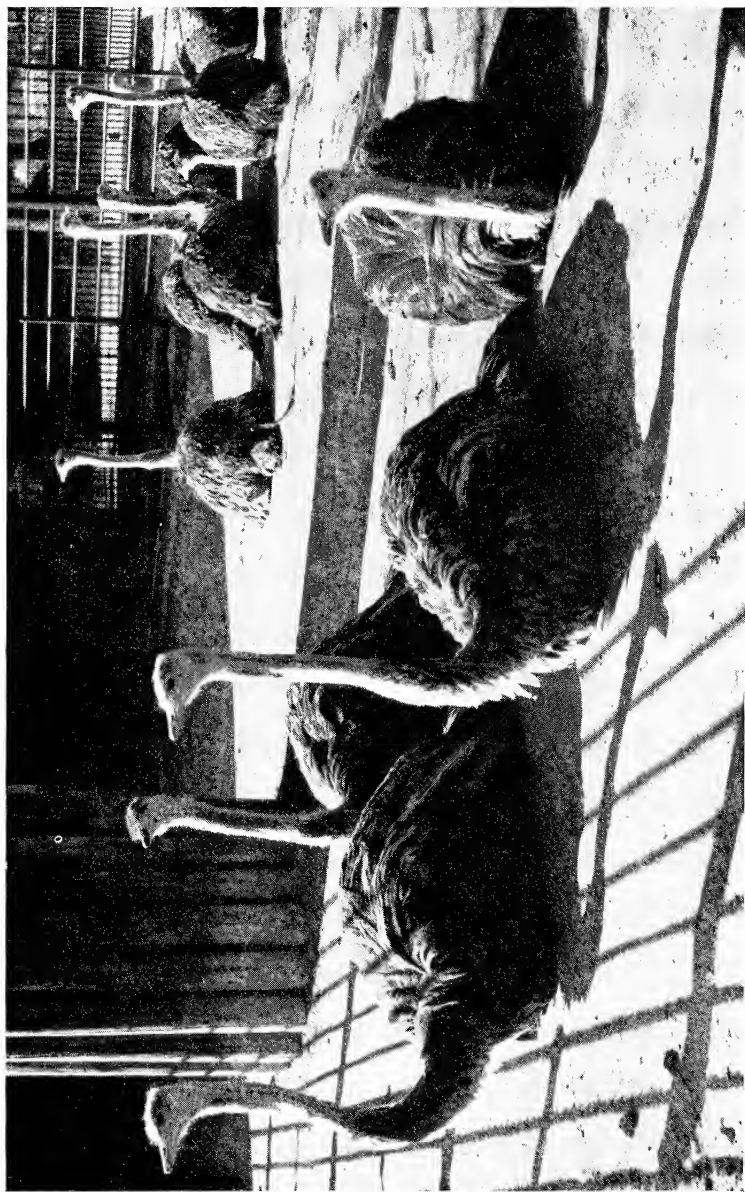
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THE OSTRICHES AT THE AGE OF SIX MONTHS.

[Hofinger.

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY  
AND THE AVICULTURAL SOCIETY OF AMERICA

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JULY–AUGUST, 1957

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## NOTES ON CAPTIVE-BRED OSTRICHES AT THE BASEL ZOOLOGICAL GARDEN

By Dr. H. WACKERNAGEL (Basel, Switzerland)

During 3rd–9th September, 1956, eleven healthy Ostriches were hatched at the Basel Zoo after an incubation period of 47–53 days. The clutch of sixteen eggs was incubated by the parent birds themselves. Seven eggs were placed in an incubator after 38, and the remaining eggs after 48, days of incubation, because of the cold and rainy weather. Four eggs did not hatch. They proved to be infertile or contained dead embryos. One Ostrich hatched under the parents was found dead in the nest. The newly hatched chicks were placed in a modified poultry house which serves mainly for raising birds. It has a wooden floor, big windows to the south, and access to a lawn. The floor was covered with sand and the room was heated by infra-red lamps to a temperature of 25°–30° C. At the beginning the temperature was never allowed to fall below 20° C. The little birds soon seemed to find places under the lamps where they felt comfortable. They were left without food for about two days, then dishes were put before them containing chopped fresh alfalfa, carrots, leaves of dandelion and, at times, lettuce. In addition, they were given a pelleted all-mash mixture designed for pullets, containing about 14 per cent of crude protein, Spratt's Weetmeet, some hard-boiled egg, and crushed Ostrich-eggshell. From the beginning the green stuff, especially alfalfa, was much liked but the pellets, too, were accepted in increasing quantities and we feel that we owe much of our success to this well-balanced diet. Water was offered about twice daily and the birds took to it most of the time, but we do not think that it is essential. At first the birds seemed quite avid for their own droppings but this habit was soon lost. Anyone who has tried raising Ostriches knows how much devotion and skill it takes to induce these birds to eat sufficient

quantities of food. When left alone they will walk about, peck now and then at conspicuous objects, and finally die of starvation. In captivity someone has to take the place of a parent bird, not only during the first days but for a number of weeks, and knock at the dish or the floor where the food is placed, or move the food in the dish or let it drop in front of the birds, etc. It will pay to take this trouble. Of course, it is easier to raise a whole flock, but even so the mutual stimulation does not seem to suffice. I often put this sentence in my notes: "Now it seems that the birds will soon settle by themselves"—but invariably it proved necessary or at least advantageous to keep them company. By touching the bellies it was possible to find out if they were duly filled. It seems to be advisable to keep them company up to the age of about three to four months.

Our birds developed nicely and never caused much worry. On sunny days they were allowed to exercise freely in the open, which stimulated their appetite and made them less excitable. Furthermore, plenty of exercise seems desirable for sound development. On the lawn the birds revealed their herbivorous nature by pulling out and eating grass, denuding whole areas of growth down to the ground. Eating, sleeping, and preening were performed at regular periods. Feeding was most intensive during the two to three hours before sunset and stimulating the birds during this time of the day is considered most effective. In other words: the opportunity of obtaining full bellies in the evening should not be missed.

One of the birds was lost at the age of about three weeks. It had not eaten for about two days and the dissection revealed its intestines heavily filled with small pebbles. We do not know, however, if this was the actual cause of death.

When the birds were about two months of age the pellets could be offered dry in a separate dish and a calculated dose of a calcium-phosphorus-vitamin-D-preparation was given in addition. At that age the daily allowance per bird was about 1 kg. of chopped vegetables (mostly alfalfa) and about half a pound of pellets and Spratt's Weet-meet. The daily exercise on the lawn was never discontinued, in spite of the increasingly cooler weather and occasional fall of rain and snow. Cold alone did not seem to hurt the birds when they were exposed, as long as they kept moving. The birds obviously enjoyed these outings, mostly indulging in lively dances. Room temperature often fell below 20° C.

As the birds grew bigger enormous quantities of food were eaten. In December cabbage was introduced in place of alfalfa, which was not available any more, and the pellets were given as the only concentrate. Consumption then amounted to about 1 kg. of concentrate and at least twice that amount of vegetables per bird per day.

Dancing was often performed in the stable, too, which occasionally



caused skin lesions and bruises on the birds and broken windows in the building. The windows consequently had to be screened by wire netting. We did not worry about the birds' injuries at first, taking them as a sign of health and vigour, but after a while it became necessary to move the birds to larger quarters. In February the Antelope House became the new home of the birds, which had almost attained the height of a man. After a few days of excitement and decreased food consumption the Ostriches settled down nicely. Soon the appetite was regained and in March the daily consumption of each bird had risen to 2 kg. of pellets and about 7 kg. of vegetables. They continue to develop into splendid specimens, pleasing their keepers by their tame and mannerly conduct.

\* \* \*

## ON THE DISPLAY AND BREEDING OF THE KING BIRD OF PARADISE, *CICINNURUS REGIUS REX* (SCOP.) IN CAPTIVITY

By STEN BERGMAN (Rönninge, per Stockholm, Sweden)

Reprinted by kind permission from NOVA GUINEA. New Ser., Vol. 7, Part 2, 20th November, 1956.

The King Bird of Paradise, *Cicinnurus regius* (Linnæus), is certainly one of the most magnificent birds of the world. The vermilion colouring of the head and upper parts of the body, shimmering with every movement, is of a supreme beauty. Even more remarkable are the adornments with which the male bird is furnished: the two superbly sweeping tail wires, each tipped with a gleaming, spirally curved disc. In addition, there are the brown, fan-like side-plumes bordered with emerald green, which lie folded under each wing and can be spread out at will.

Although the King Bird of Paradise was given its name by Linnæus in 1758, its life and habits in the tropical jungle are still very little known. When Hartert, in 1910, wrote an article about those Birds of Paradise whose eggs were at that time known (*Novitates Zoologicae*, 17 : 484-490), he expressed his surprise that nobody had succeeded in finding the nest of *Cicinnurus*, since in certain parts of its range in New Guinea and on a few neighbouring islands the bird is not, after all, so rare.

At the end of March, 1929, however, Wilfred Frost discovered the first and, as far as I know, hitherto only known nest. This find revealed the quite unexpected fact that the King Bird was a hole-breeder in contrast to all other species of Birds of Paradise, which have open nests. The nest found by Frost was built in a small tree, about 7 feet from the ground. He describes the nest as follows: "The nest hole

was small, about  $1\frac{1}{2}$  inches in diameter, and approximately 18 inches deep, but filled to within a few inches of the lip with palm fibre. The eggs, two in number, measuring  $27.5 \times 21$  mm., were of a creamy white, flushed with pink, typically marked and curiously resembling, except for size, those of *Paradisæa apoda*." (*Avicultural Magazine* (4), 8 : 33-5, 1930.)

The first live Birds of Paradise which came to Europe—two *Paradisæa minor*—were brought home in 1862 by Alfred Russel Wallace and placed in the London Zoo, where a number of different species have since been kept, as in many other Zoological Gardens.

Up to the present, no Bird of Paradise has been bred in Europe, although some instances of egg-laying have occurred. As far as I know, the only species which has ever successfully bred in captivity before 1956 is "Empress of Germany's Bird of Paradise" (*Paradisæa apoda augustavictoriæ* Cabanis), of which in 1942 one young was reared in Prince Dharmakumarsinhji's aviary in Bhavnagar, India (*Zoologica*, New York, 28 : 139-144, 1943). In the Zoo of Surabaya, on Java, a King Bird of Paradise, according to Frost, laid two eggs which were hatched out, but the young died in the nest. The same female later laid one more egg but failed to incubate it (*Avicultural Magazine* (4), 8 : 33-5, 1930). This, as far as I know, is the only attempt made by a King Bird to breed in captivity before 1956.

When returning to Sweden from two journeys to Dutch New Guinea, in 1948-49 and 1952-53 for ornithological research, I was permitted by the Dutch authorities to bring to Sweden a number of live Birds of Paradise for the purpose of continuing my studies and observations on these birds and, if possible, to make breeding experiments with them. For my first permit I am much indebted to my colleague of the 1948-49 expedition, Dr. M. A. Lieftinck, then Director of the Zoological Museum in Bogor, Java. For my second permit I have to thank H.E. the Governor of Dutch New Guinea, Dr. J. van Baal, the former resident of West New Guinea, Mr. L. L. A. Maurenbrecher, and Professor Dr. L. F. de Beaufort.

Among my Birds of Paradise were some male King Birds, *Cicinnurus regius rex* (Scopoli). I did not, however, succeed in bringing home any female of this species, but through the courtesy of Director S. van Reesema and Ir. F. J. Appelman, of the Rotterdam Zoo, I was permitted to exchange one male *Cicinnurus* for a female of the same species.

In October, 1955, this female was joined with a male that had just changed its plumage and the pair was allotted a space of  $17\frac{1}{2}$  m<sup>3</sup> in my house. The room was planted with a number of *Monstera*, *Ficus*, *Bougainvillea*, and other tropical plants. The floor was covered partly with sand and partly with moss. The room had a constant temperature of 25° C., regulated by thermostat, and the necessary moisture was

effected by squirting all plants and the moss with water every day. Two sides of the room were lighted by two double windows on each side and two electric tube lights were burning in the King Bird's room for twelve hours a day—from 8 a.m. to 8 p.m.—all the year round.

As nesting sites a vertical log and two nest-boxes were installed. All the three nesting sites had different-sized entrance holes.

Shortly after the male bird had been let into the female's room, in which she had spent over three months waiting for him to finish his moult, he started his courting. He knew her well, since their rooms had been separated only by wire mesh.

He began his courtship by raising his tail and tail wires forward until they lay at right-angles to the length of the body. He then spread out his wings so that they were slightly cupped, as shown in Plate 4. Turning towards the female, he constantly vibrated his wings, which were soon spread out to their full length.

Suddenly he changed his display completely. Instead of sitting on the branch the next instant he was hanging upside-down with his feet clinging to it. His wings were still fully expanded and vibrating. The bill was open, so that the yellow-green gape was plainly visible.

After hanging in this manner for nearly ten seconds he closed his wings and, still in a hanging position, swung his body from left to right for a few seconds. He then released his hold, dropped a short distance, and flew on to the branch.

Some days later, at 11 a.m., the male bird was singing. The song is somewhat similar to the song of the skylark, although not so loud. When the male bird sings, the discs of the tail wires are in constant motion. Whilst he was singing the female flew over and sat on a branch near to him.

He then expanded his wings and vibrated them. He moved closer to her and sat on the same branch. Then he began displaying in the usual manner, i.e. he expanded the fans and drew them up towards his head, as shown in Plates 2 and 3. At the same time he puffed out the white feathers of the underside, so as to become almost spherical, sweeping his tail wires up over his back as illustrated by the photographs just mentioned. His head was raised obliquely upwards and constantly swayed slightly from side to side.

During this display the male sat with his back turned towards the female. She moved nearer to him, so that she was at a distance of approximately 5 cm. from him. While he was displaying she occasionally picked at his feathers.

All through the winter the male was observed displaying for the female almost every day and sometimes several times a day. The most usual time for the display was in the morning hours between 8 and 10 and in the afternoons from 3 to 4. This applies to the winter months. During the summer months the birds were not excluded from the

Swedish summer daylight, which during the lightest period, in June, lasts for approximately twenty-one hours out of the twenty-four, in the Stockholm area.

In their native country Birds of Paradise are used to approximately a twelve-hour day and a twelve-hour night. During the winter months in Sweden, where, in the Stockholm area, there is only about six and a half hours' daylight at the darkest period, the birds were, as already mentioned, exposed to twelve hours of artificial light. I have never noticed that they suffered any inconvenience from the long daylight in summer. As a compensation, they took one or several naps during the day. During the summer, also, the display-times have been assigned to the same time as in the winter, but the variations in regard to the time have been greater.

The most frequent way of display of the King Bird is illustrated on Plates 2 and 3 ; in exceptional cases it continued for two minutes, but usually it was considerably shorter. When the male is really in the mood for display he repeats his performance many times and it may be observed at any time of the day, or in the evening.

When the display has continued for a while in the normal manner, with outspread fans and upbent tail wires, often the male will suddenly turn round and continue the performance in the opposite direction. Usually he alters his display after this complete turn, so that the fans are drawn in under the wings and the bird, with wide-open beak, sways his tail from side to side in the manner shown in Plate 1. A departure from this attitude is that the fans remain expanded while the tail wires are swayed from side to side. The body remains stationary during this display.

Since 10th October, when male and female were placed together, I have seen the inverted display many times during the course of the winter and spring. Members of my family have also sometimes seen this display on other occasions and, without doubt, the male often performed his inverted display when he was not under observation. The first part of the upside-down exhibit usually continues for five to ten seconds and the second phase, when he hangs with closed wings and sways from side to side, takes a similar amount of time. But on one occasion he hung with closed wings, completely motionless, for almost one minute. The various forms of display which I have observed agree in all essentials with those described by Ingram for a bird kept in captivity (*The Ibis* (9), 2 : 223-9, 1907).

During the course of the spring the female began to show increasing interest in one of the nest-boxes, the one with the largest entrance hole (diameter 8.5 cm.). In the middle of December, 1955, she had been observed for the first time to sit in the entrance hole and look in and a few days later she went inside. During the four following months she made short, sporadic visits to the nest-box. In May, 1956, however, she

flew in almost every day, and sometimes she would stay in the nest-box for half an hour to a few hours. I provided the nest-box with moss, dried fern leaves, and very thin grass so as to imitate a kind of nest. Moreover I put fern leaves and dried grass into the birdroom. The female accepted this nest but completed it with the finest grass straws she could find in the aviary.

In connection with her growing interest in the nest, the male became more ardent in his courtship. On the 24th May the male chased the female from branch to branch. She moved slowly out of his way. Now and then she stopped and for the first time I saw her sitting in mating position with her body lowered against the branch and her tail raised. Her head was pointed in an upward direction in exactly the same manner as the male's during the normal display. But when the male came near she flew away again. This happened several times. As soon as the male saw her take up this position he immediately flew to her, but she continued to avoid him. Consequently no mating took place.

After the male had been pursuing the female for some time he displayed in inverted position, but even this acrobatic performance did not lead to any mating.

On 11th June the female was in the nest-box the whole morning. When I left home at 10 a.m. to drive 30 km. into Stockholm she was still inside the nest-box. The male displayed outside the nest-box in the morning, although the female could not see the performance. At noon my wife telephoned me to say that there was an egg in the nest-box. When I returned in the afternoon the female had come out and was eating. I then went in and looked into the nest-box, which was so constructed that part of the front could be swung open by means of a hinge.

The egg was exceptionally large in comparison with the bird and proved to be a typical Bird of Paradise egg: cream-coloured, with numerous chocolate-brown streaks on the large end. The female protested strongly when I approached the nest and she continued to express her discontent all the time that I was inside her room. She flew right up to me at the nest to see what I was doing.

Since there had been no egg in the nest the previous evening and as the female had not spent the night in the nest-box, the egg must have been laid either in the early morning or forenoon of 11th June. As the female was in the nest-box all through the day of the 11th, except when eating outside, the incubation must have started as soon as the egg was laid. The following day I did not see her when she came out to eat and, as I naturally did not want to drive her out of the nest-box to see if she had laid another egg, it was not until the 13th June that I was able to ascertain that two eggs were present in the nest.

During the incubation the male bird sat almost continuously on a branch close beside the nest-box. He would occasionally stretch his

head to have a look, but he was never seen to enter the nest-box. He therefore never relieved the female during the incubation, neither did he give her food during this period.

On the other hand, he displayed diligently for her in the neighbourhood of the nest, partly in the usual manner, with expanded fans and tail-wires erected over his back, and partly, on many occasions, in the inverted position. He also repeatedly sat on a branch in front of the nest-box and vibrated with expanded wings directly outside the entrance hole, so that the female could not avoid seeing his courting.

On numerous occasions he sang his bubbling song right outside the nest-box while the female was incubating. When she came out to eat or to take a bath, he took the opportunity to look at the eggs and, later, at the nestlings, through the entrance hole.

As part of my preparations for eventual breeding I had placed a bowl of finely crushed shells in the King Bird's room. Before laying her eggs, I had often seen the female eating these shells, but during the incubation period I never saw her swallow any pieces of shell when she came out to eat. After the eggs were hatched and the young birds were in urgent need of calcium for bone-formation, she ate the shells several times a day.

During the incubation period the female came out three or four times a day to eat. As a general rule, she also took a bath once a day and preened her feathers very carefully. The length of her visits to the feeding place varied from a few to forty-three minutes, which was the longest absence from the eggs that I observed. On that occasion the female, after she had fed, had a thorough bath and then preened her feathers for such a long time that both the male bird and I began to be nervous about the eggs. All the time the male sat beside the nest-box and repeatedly uttered his call of enticement: *a-a-a-a-a* (pronounced as in English) when she seemed in no hurry to return to the eggs.

I had not seen the birds mate, and I dared not take the eggs out of the nest to see if they were fertile. It was therefore with eager expectation that I waited to see if there would be any results at the time I had estimated.

On the morning of 28th June, after seventeen days, the eggs were still unhatched. At 3 p.m., when she came out to feed, I again inspected the nest-box and to my great joy found a newly-hatched, dark red little thing and one egg in the nest. The egg-shell was not in the nest but was found at the other end of the aviary.

I immediately went out to find fresh "ants' eggs" (more properly the pupæ of ants enclosed in their cocoons), which are the finest food one can give to an insect-eating bird. In an ant-heap about 10 km. from my house I succeeded in obtaining a good portion, which the female readily consumed.

At 7 o'clock the following morning I looked into the nest-box and



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*CICINNURUS REGIUS REX* (SCOPOLI), MALE.

[Sten Bergman

A rather unusual form of display, sometimes a continuation of that shown on Plates 2 and 3.

[To face p. 120

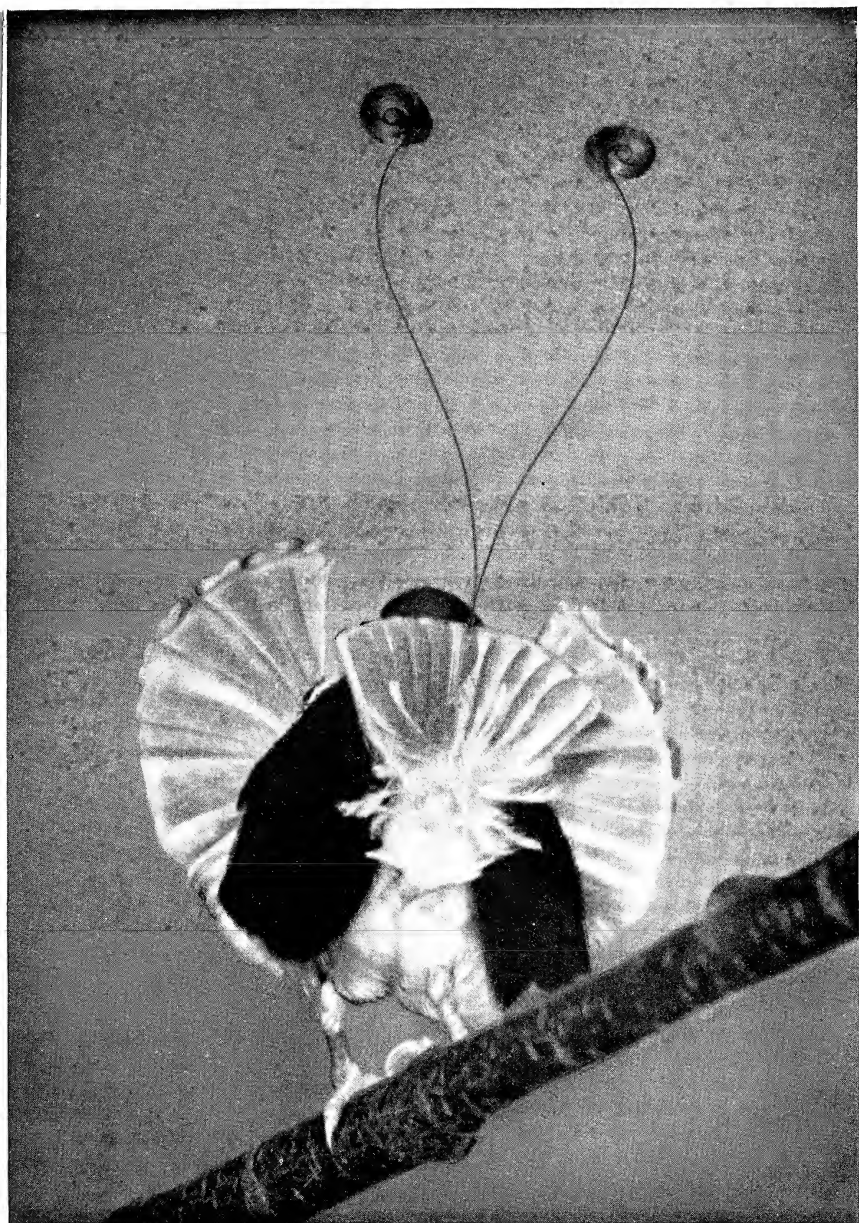


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[Sten Bergman

*CICINNURUS REGIUS REX* (SCOPOLI), MALE IN DISPLAY.

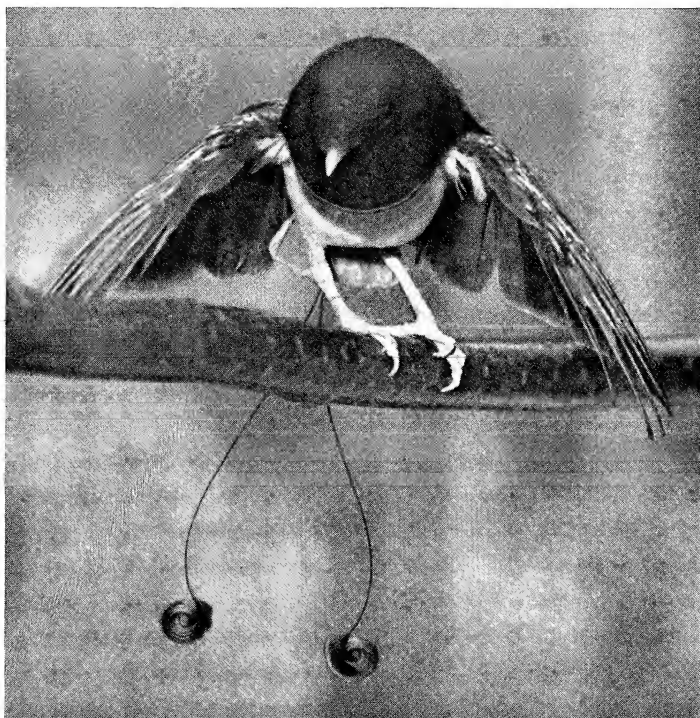




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DISPLAY ATTITUDE OF *CICINNURUS REGIUS REX* (SCOPOLI), SEEN FROM  
BEHIND.



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[Sten Bergman

THE USUAL COURTSHIP ATTITUDE OF *CICINNURUS REGIUS REX* (SCOPOLI),  
THE MALE TAKING POSITION IN FRONT OF THE FEMALE WITH OUT-  
STRETCHED QUIVERING WINGS.



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[Slen Bergman

YOUNG KING BIRDS OF PARADISE IN THE NEST. ONE IS FIVE, THE OTHER  
SIX DAYS OLD.

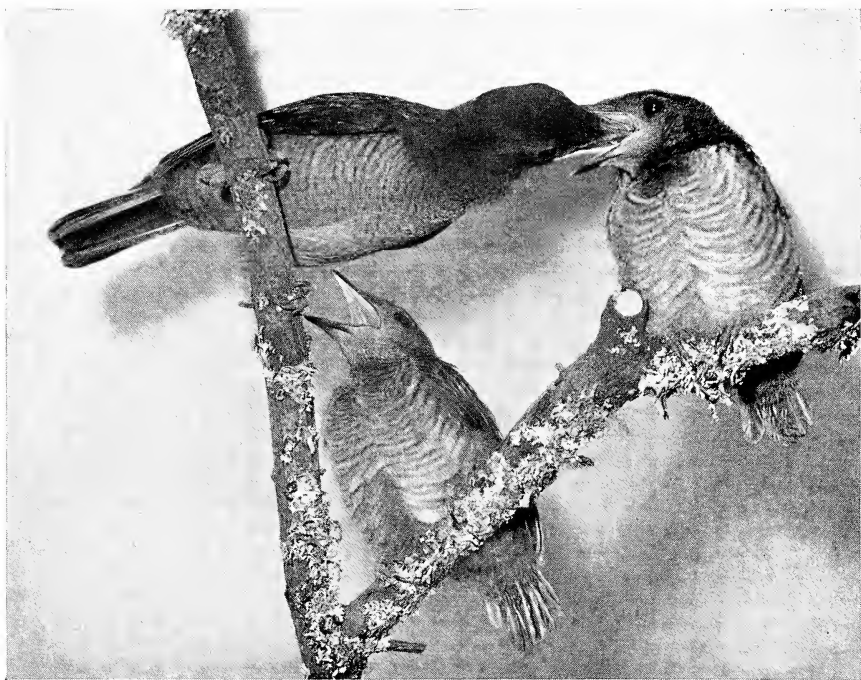
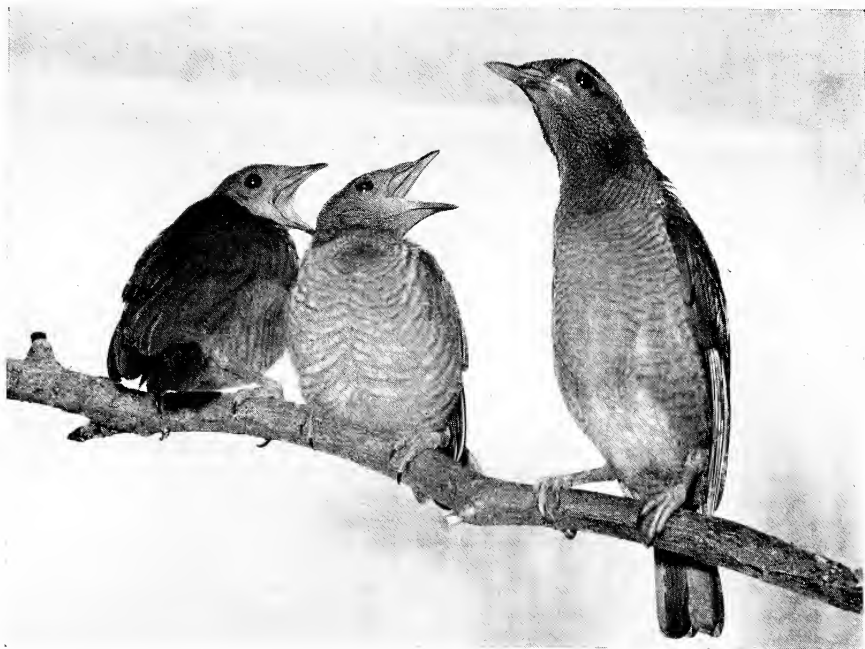


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TWO PICTURES OF YOUNG *CICINNURUS*, FOURTEEN AND FIFTEEN DAYS OLD,  
IN THE NEST.





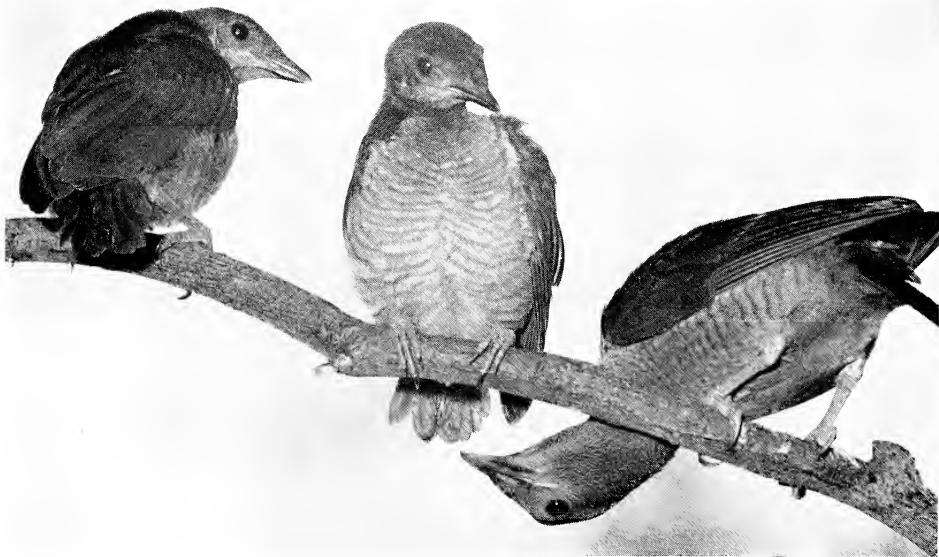
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FEMALE *CICINNURUS*, APPROACHING AND FEEDING HER YOUNG, WHICH  
IN THESE PICTURES ARE TWENTY-ONE AND TWENTY-TWO DAYS OLD.



YOUNG *CICINNURUS* NINETEEN DAYS OLD.



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[Sten Bergman

FEMALE *CICINNURUS* WITH HER YOUNG OUTSIDE THE NEST, WAITING FOR  
THE REMOVAL OF DROPPINGS.

found that the other egg also had hatched. It was evident, therefore, that the second egg was laid one day later than the first.

When the female returned to the nest-box, after I had visited it, I could see through the large entrance-hole that she regurgitated food from her crop to feed her young. During the whole feeding period she fed her young in this manner.

Apart from fresh ants' pupæ the family were given the following food : chopped yolk of hard-boiled egg, fresh raw meat in very small pieces, finely-chopped apple, boiled rice and finely-chopped tomato, soaked raisins, small mealworms, small live grasshoppers, and fresh whortleberries.

The fact that the eggs were hatched during the summer considerably facilitated the feeding problem. I was able to obtain fresh ants' pupæ, live grasshoppers, and fresh whortleberries. Six months before the breeding I started to give both birds daily a portion of thawed deep-frozen ant pupæ.

When supplied with food the young emitted a suppressed, feeble, peeping sound, rather like small mice. The nestlings had smooth, naked bodies and were blind. All the young birds' droppings were swallowed by the mother. When the delicate young birds would not open their beaks she touched their heads very carefully with her bill.

On the fifth day I saw the young open their eyes for the first time. Their gapes then were vivid yellow. When they were a week old I happened to open the front of the nest-box and swung it to one side. After a moment's hesitation the female fed her young just the same. Each young bird was usually given three to four regurgitated portions at one time.

Every day I released a number of small grasshoppers in the King Bird's room. The female caught them and, after she had pulled off their legs and swallowed them, regurgitated them to feed her young. When the young ones were eight and nine days old respectively, she would feed them while sitting in the entrance hole, stretching towards them and the young towards her.

It was evident that the female selected the food offered to her young. Once I watched her standing beside the young and regurgitating the contents of her crop when a whortleberry appeared. She re-swallowed this and regurgitated a mealworm instead. This she placed well forward in her beak and stuffed it into the gape of one of the young. Thereafter she regurgitated again, brought up a whortleberry, re-swallowed it, and instead regurgitated another mealworm, which she gave to the other nestling.

Since the young birds' droppings never showed any trace of blue colouring, it is obvious that the female did not feed them with whortleberries, though she ate these berries herself several times a day.

When the young birds were twelve days old nearly all their feathers

were still in their quills, which were bluish grey in colour, though one or two wing feathers had begun to sprout and these were brown. When not asleep or feeding the young birds spent nearly all their time preening their sprouting feathers.

At the age of fourteen days all feathers, both on the upper and underside, had sprouted. During this latter time the female had fed her young almost exclusively on grasshoppers. When the young were fourteen days old I saw, for the first time, the female emerging from the entrance hole with the nestlings' droppings in her beak. She then dropped them on the ground instead of swallowing them, as she had always done previously.

Between their twelfth and fourteenth day the young birds developed so quickly that one could scarcely recognize them. At the fourteenth day the whole of their upper side was brown with more red-brown on the wings. The underside was grey-brown with dark cross-bars. The legs and feet were blue, but duller in colour than those of the parents. They could now sit like proper birds, preening themselves incessantly, or stretching their legs and wings and fluttering comfortably.

When, having taken some photographs of the young in the open nest-box, I had reclosed it and had been absent for a while, I found on my return that one of them was sitting in the entrance-hole. Shortly afterwards it flew out and sat on a branch close by. I picked up the young bird and held it in my hand for a while. The female flew round about and warned very loudly and incessantly. She crept with expanded wings and tail along the ground and among the branches and leaves round me. When I moved the fledgeling from one hand to the other, the mother alighted on my head and pecked my crown with her beak, beating me also with her wings. The bird was very excited, but the male merely sat calmly at a distance and looked on. He has never been observed feeding the young ones, either in the nest-box, or outside it.

The following morning both fledgelings were out and were regularly fed by the mother, as they sat on different branches. As the young were hatched on the 28th and 29th June, the eldest one had flown out on 12th July and the other on 13th July, they thus had left the nest at the fourteenth day. In the jungle they would undoubtedly have remained longer in the nest and this would have happened here also had they not been disturbed by being photographed, when the front of the nest-box had been opened.

Despite their youth, the young birds were quite sure holding on to their branches and flying to the branch for which they were aiming, although they could only fly in a straight direction, as their tail-feathers were only half a centimetre long. On the fifteenth day they could already sit on one leg and scratch their heads. Sometimes one of them would bend forward, turning round the branch and come up on the



other side without releasing its hold, an art with which all my full-grown Birds of Paradise are experts. All of them also are capable of doing both forward and backward somersaults on their branch.

The female, after having fed the young in the nest, always waited for their droppings ; but she changed her behaviour after they had left the nest and spent the day in the open. When she had finished feeding her young she had the amusing habit of bending her head inquisitively under the tail of one of them and then sitting motionless waiting for the droppings, but always in vain !

When the young were fifteen and sixteen days old, I saw them fight each other for the first time, which also happened the next day and on several later occasions. They would peck at each other with flapping wings like small cockerels. Sometimes they would swing round the branch until one of them would force the other to loose his footing and flutter down.

Every evening towards dusk the young birds began to grow restless, flying from branch to branch and from one end of the aviary to the other. It was obviously an expression of anxiety which so many birds feel in the evening, when it is time to seek a resting place for the night. At this time they uttered a cry which may be transcribed as *tjao-tjao*. A couple of weeks later they produced a flutelike complaining whistle, often uttered twice, and which later could be heard at any time of the day. When the young birds were fifty days old I heard them for the first time give their warning cry, which was reminiscent of the parents', although it was not so harsh.

At the twenty-fifth day the young birds' appearance may be described as follows : beak, dark horn-coloured, lighter at the base. Iris, grey-brown. Upper parts of the head, brown tinged with russet. The back, grey-brown. The wings, grey-brown like the tail ; the wing feathers decidedly darker brown. The greater wing-coverts and outer webs of the primaries red-brown. The underside, light grey with dark cross-bars, curved on either half of the underside. Closer dark cross-bars on the under tail-coverts. A light bar immediately above the eyes, and over this a dark spot. The chin, grey-brownish yellow with small descending streaks and points. The gape vivid yellow. The inner anterior part of the lower mandible and its borders, yellowish-green, as also the upper mandible. The legs and feet were blue, paler than the female's.

At the twenty-fifth day the young birds' tail feathers were approximately 3 cm. long. At this age they were fed every day with whortleberries, which, as mentioned before, were never given to them when still in the nest. Grasshoppers now formed a very substantial part of their diet.

At the age of one month the young birds' tail feathers were nearly as long as the female's. The young ones were much lighter on the under-

side than the female. The mother still fed them and when they begged for food they uttered feeble cheeps whilst fluttering their wings.

The male's moult began by casting one of his tail-wires on 18th June and the other on 19th June, while the female was incubating. The female started her moult on 10th August, when the young were forty-one and forty-two days old.

When the young birds were nearly two months old they changed all their feathers on the sides and top of the head, and the entire back acquired a pure grey colour. They had also grown new feathers on the under parts, where the dark cross-bars, especially on the flanks, were strongly marked. These bars were broader than in the female, which was generally browner on the under parts than the young ones. The greater wing-coverts, the primary coverts, and the outer webs of the primaries were vivid red-brown.

As I write these words the young birds are three months old. Like their parents they are both in splendid condition. They feed themselves with all the food they get, but the female gives them a titbit now and then.

The male has now almost completed his moult and is extremely elegant. It is only the tail-wires which have not yet reached their full length. The fans are not yet full grown either. Feeling that he has regained his splendour he has started to sing and display. The female has completed her moult of all the feathers on the neck and head, and has also grown new feathers on the underside.

It now remains to be seen whether my King Birds will repeat their breeding.

As far as I know this has been the first successful attempt at breeding that has ever occurred with a *Cicinnurus* held in captivity.

\* \* \*

Grateful acknowledgment is made to E. J. Brill, Leiden, publishers of NOVA GUINEA, for the loan of the blocks of the illustrations of this article.—ED.

## MALACHITE-CRESTED KINGFISHERS

*(Corythornis cristata)*

By J. M. SPENCE (Port Elizabeth Museum, South Africa)

A nest containing five young Malachite-crested Kingfishers was found near Port Elizabeth on 19th January. It was about 10 feet up in a river bank, and had a tunnel about 12 inches deep, the actual nest cavity was about six inches in diameter and extremely foul smelling. The young were estimated to be about three weeks old. They were covered with feather sheaths, some of which were already splitting to reveal the blue feathers on the back. A week later all the sheaths had vanished and the birds were fully fledged. Their droppings were very liquid and quickly absorbed in sand. When first taken from the nest the young would defecate in all directions, and if the droppings happened to fall on the feather sheaths they would just run off, thereby keeping them quite clean. As they grew older the chicks would back away from the others and deposit the droppings well away from them.

Three of the young were taken and hand-reared ; they thrived on strips of fish as well as ten to fifteen small whole fish per bird per day. When fed whole fish they would throw up a cast of the scales and bones.

For the two days after they were feathered the young birds made no attempt to fly, then on the morning of the 28th they jumped one by one to the edge of their box and flew strongly around the room. Needless to say, they were immediately caged. The next day they started to take an interest in any food that accidentally fell to the floor while they were being fed, but made no attempt to pick it up. The following morning a dish containing some small live fish in shallow water was placed in their cage. Although obviously interested, they made no attempt to catch any until the 31st. Next day they were taking live and strips of fish. I found that raw fish is rather inclined to come to pieces in water, so strips of donkey heart were tried ; this proved very successful, and they took to it without any trouble. They were not hand-fed after they were five weeks old.

They are great bathers, and if not given a dish of clean water each day they use the feeding dish to wash in. Their quaint habit of bobbing their heads up and down was obvious from the day they could fly, but they very seldom raise their crests.

They have two methods of " catching " their food, one by diving either from a perch or hovering above the food or else, by alighting on the edge of the dish and pecking the strips of food out. These are usually thoroughly " killed " before eating by being beaten on a perch. If the food is small fish they are always swallowed head first.

Although they are not as brightly coloured as the adult, they are nevertheless very beautiful, having the area between the eye and lores a light buff. The cheeks and breast are dark grey-brown, with the throat and crown as in the adult. The abdomen is a lighter colour orange than the flanks and shoulders. The rump and upper tail-coverts are bright metallic blue, while the mantle and back are bright metallic greenish-blue. The primaries are black, and the secondaries and coverts dark blue with bright turquoise spots. The feet and legs are orange underneath and grey above, while the beak is black with a white tip.

As you can imagine, they are very interesting and beautiful little birds, and make a wonderful addition to our fast-growing collection of live birds.

\* \* \*

## FIRST BREEDING IN CAPTIVITY OF THE SEVERE MACAW

(*Ara severa* (Linnaeus))

By OTTO HIRTHE (Copenhagen)

(*Translated from the Danish by C. af Enehjelm*)

In 1953 I bought a nice pair of Severe Macaws from the animal dealer C. H. Krag, of this town. The birds were almost identical, only the red colour on the forehead of the bird believed to be the cock was somewhat more pronounced. The birds seemed very attached to each other, so I thought they must be a true pair. I put them in a compartment of my largest aviary. This consists of a long brick building, 60 feet long, 8 feet wide, and 8 feet high. The house is divided into eighteen compartments, each approximately 3 feet by 5 feet, with a 3 feet passageway running along the back of the house. Each compartment has an outside flight, approximately  $3\frac{1}{2}$  feet wide, 20 feet long, and 7 feet high. One box was hung in the shelter and another in the outside flight. The boxes were made of  $1\frac{1}{2}$  inch boards, approximately 1 foot by 1 foot and  $2\frac{1}{2}$  feet high. On the bottom of the boxes I placed a layer of moist earth, and on the top of this a layer of peat-moss, about 6 inches deep in all. Neither of the boxes was used for sleeping. In spite of the very cold winter, 1953-54, the birds spent all day in the flight, even the cold nights did not seem to hurt them in any way.

The food consisted of sunflower seed, various millets, peanuts, and groats. They also got all kinds of sweet fruit, apples, oranges, grapes, etc. Strangely enough the birds did not seem to appreciate bananas. Raw carrot was given freely, and should, in my experience, always be fed to nesting parrots and parrakeets. Also sprouted oats and

sprouted spray millet were given daily. The birds did not take ordinary green food, as usually given, with the exception of the yellow dandelion blossoms, which they took readily, but not the ripe heads. The Macaws seemed to thrive excellently on this food, and at the end of May, 1954, I thought that the birds would start nesting, as they seemed to be interested in the nest-box. Things, however, went differently. I give fresh branches in the flight, and every time I bring new branches, the Macaws first bite off all the leaves, then the twigs, and finally, gnaw off the bark. Macaws should always have fresh branches for gnawing. This does them a lot of good and keeps them occupied.

At the beginning of August the birds started to feed each other, and I also saw a single attempt at mating. It really was a true pair. On the 6th August the hen disappeared into the box in the outside flight and the cock spent most of his time in the neighbourhood of the box. He also visited the hen several times a day and slept in the box every night during the period of incubation. A nest inspection was very difficult, as I was usually attacked by the birds. On the 19th of August I took a thin lath and gently pushed away the birds from the centre of the nest, and an egg was visible on the bottom of the box. When checking again on the 24th of August, I saw three eggs, and these comprised the whole clutch. Apparently the eggs were laid every other day. I did not inspect the nest again until the 12th of September, when I saw a young bird, which seemed to be newly hatched. Three days later, when checking the nest, I found another young one lying dead, apparently crushed under the mother. The third egg was infertile, and was removed. The remaining young one thrived excellently. Besides the ordinary food, I gave eggfood (hard-boiled egg with biscuit), and boiled rice with milk and sweetened with sugar and different sweet jams—this food, by the way, also being given at intervals all the year round. The youngster left the nest on the 28th October, beautifully feathered, and was greeted by the parents with loud cries. A little later the young bird flew with the parents through the long flight, the parents taking good care of it. The bird appears to be a cock, the red patch on the forehead being as big as that of the old cock. It is delightfully tame, and takes food from my hand.

The incubation period of the Severe Macaw is obviously 25–28 days, and the young birds leave the nest when about 7 weeks old. They are fed by their parents for quite a long time, but are independent about six weeks after leaving the nest.

In 1955 another young bird was bred, and in 1956 three. These were exhibited at the large bird show at Copenhagen in November, and were awarded the 'Sluis' cup for meritorious breeding.

## NOTES ON THE DARK FIRE FINCH

*(Lagonosticta rubricata)*

By C. J. O. HARRISON (Tooting, London, England)

These notes are an addition to the previous article (AVICULTURAL MAGAZINE, vol. 62, 1956, p. 128), and complete the study on those Fire Finches commonly available to aviculturists in this country.

*Appearance*

The Dark Fire Finch (*Lagonosticta rubricata*) is also known as the Blue-billed Fire Finch, though this name is usually applied to the West African subspecies, which is the one most frequently imported, and the one on which these observations were made.

The cock is dark, perhaps dull, scarlet on the head, breast, and belly, and the mantle is a dark slate-grey. In this subspecies the dark grey extends on to the nape and crown, but in others the head may be entirely red. The wings are a similar colour to the mantle, but perhaps a little browner. The rump is scarlet, as is the base of the black tail, while the under tail-coverts are black. There is a faint white rim to the eye, and the bill is steel-blue. The hen is pinker than the cock on head and breast with a small area of buff on the belly. The general shape is that of a small squat bird with a narrow head and prominent bill.

This species is unfortunately being widely sold and exhibited as another species—Jameson's Fire Finch (*L. jamesoni*). At one time the two were considered to be related subspecies, but they are now separated. Jameson's Fire Finch is pinker on the head, light red on the breast, and brown on the back: but the principal distinguishing feature is the shape of the second primary feather. The first primary in both species is vestigial, and what appears to be the first is in reality the second. In Jameson's Fire Finch this latter feather tapers a little towards the tip, but in the case of the Dark Fire Finch it is cut away on the inner web towards the tip, so that the feather narrows suddenly and the terminal portion is very slender. This feature is constant in the different sexes and plumages.

*General Behaviour*

It is a rather nervous and furtive bird, resembling the Bar-breasted Fire Finch (*L. rufopicta*) in its habits. Like that species it has a crouching posture. If alarmed it tends to hide, and if free in a room will disappear into the darkest corner or under furniture, and remain still and silent. I found that it quickly learnt to find its way around a room. Even before a nest had been made it showed preference for roosting in

a box. In spite of its furtive manner I found it an aggressive species. When two cocks were put together one would chase the other continually, one of the birds (I am not sure which) uttering a low, soft "tuc" note. When I put one with Senegal Fire Finches (*L. senegala*) and Lavender Finches (*L. caerulea*) it dominated both.

#### *Call-note*

The call-note is low-pitched, nasal, and slightly harsh—"kyew" or "kyah". It has a wide range of expression, from a soft, subdued note used between a pair when feeding or on the move, to a loud, harsh version used in periods of excitement or isolation.

#### *Alarm-note*

This differs in form from that used by the Senegal and Bar-breasted Fire Finches. It is abrupt, similar to theirs, but higher in pitch, and is repeated in a rapid series that run together to form a single rattling trill. The pitch is variable, becoming higher as anxiety increases. It is accompanied by a crouching posture similar to that of the Bar-breasted but with the head raised on a rather thin neck. The tail is held to one side, half-spread and jerked sideways at each call.

#### *Song*

The dangers of generalizations based on a study of too few specimens were brought home to me with this species, for the first cock that I possessed had a song which consisted merely of a long-drawn toneless trill on a single flat note. It was only with subsequent birds that I heard the more normal song. The cock of a nesting pair did not sing when the hen was on the nest, but used instead, low-intensity alarm-notes together with a more melodious form of the call-note.

When the hen died the cock began to sing immediately and persistently. The song was melodious though generally high-pitched, surprisingly loud, and consisted of short phrases frequently repeated. During one period I timed it and found that it consisted of phrases  $1\frac{1}{2}$ – $2\frac{1}{2}$  seconds long, uttered at intervals of 5–6 seconds. In volume and pitch it reminded me of a Robin's song, but the style was mock-Nightingale. A typical phrase would consist of the rapid repetition of a note, seven or eight times; but there were frequent changes of pitch between phrases, suggestions of crescendo and diminuendo, and sometimes a short descending cadence. Once or twice I did hear a short trill reminiscent of the first cock's song.

#### *Nest-call*

This was heard frequently during, and just after, nest-building. It was a faint persistent clucking note repeated with great rapidity.

I was not able to compare it directly, but would have said that it was lower in pitch than the Senegal Fire Finch's call, which is in turn lower than the Bar-breasted's.

### *Display*

This is similar to the display of the Bar-breasted Fire Finch. The cock holds a piece of grass or a feather by its tip. It stretches very straight upright with head thrown back and head and neck feathers sleeked down, while the belly feathers are a little fluffed and the tail half-spread. The movement consists, as in the other Fire Finches, of a series of vigorous upward jerks, usually in repeated sets of four bobs. At each jerk there is an upward movement of the bill and in many, possibly all, cases the head is turned alternately half to one side and then the other, so that the grass or feather appears to be waved jerkily from side to side while the bird is bobbing up and down. There does not appear to be any special movement at the completion of the display. I did not notice any specialized flight of the cock while carrying display material.

Unmated cocks showed what I took to be an undirected display homologous with the "stip" display in the Senegal Fire Finch. In it the bird had a rather tense posture, upright, with head raised. It continually repeated a single note which I called a "squelch" note since it reminded me most of the sound when air is squeezed out of a wet rubber sponge with a rush of tiny bubbles, and was also reminiscent of the "fwit" of a thin twig swished through the air. Each note was accompanied by an upward movement of the bill, and terminated in a subdued click.

I was surprised that it did not appear at the end of the display of the paired cock. When the hen died the cock began to intersperse its song with periodic repetitions of the note. Finally, about two weeks after the hen's death, it picked up a grass-stem and indulged in a momentary display during which I was able to detect that the note occurred, with the lifting of the grass-stem to one side or the other, at each upward jerk of the bird; but it was normally masked in my cages by the heavy thud of the bird's feet on the perch as it bounced up and down.

### *Other postures*

When the pair were first put together there was a certain amount of what appeared to be aggressive behaviour. I thought for a few days that I might have two cocks. Both birds would take up similar postures side by side, with neck stretched straight upwards, head thrown back and bill raised, while the tail was cocked and half-spread. In this position they would pivot from side to side, the bill-tips occasionally touching as though one bird was parrying the thrust



of the other. This occurred not only in the pair-formation period, but also in the early stages of nest-building.

### *Nesting*

Within a few days of being placed together a pair built a nest in a cardboard box that had been put up for that purpose. The nest was of coarse grass and leaves, and lined with feathers and fibre. As in the other Fire Finches the cock brought all the material and built the outer, rough shape of the nest, while the hen lined the nest with material brought by the cock. In this case the hen began to assist before the outer shape was complete.

### *Postscript*

These notes complete my observations on Fire Finches to date. It will be seen that they are, with the exception of the Lavender Finch, very similar species, with distinct differences of song and slighter variations of display and calls that serve to illustrate both their relationship and the differences which enable them to preserve their specific identity.

If it should be asked why they appear in these pages I would plead that it is only through a knowledge of a bird's life and behaviour that we can understand how best to keep it, and that it is only through aviculture that it has been possible for the observations to be made. Detailed studies on these species in their natural habitat are still lacking, and I hope that these notes will be of some value to future students.

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## BREEDING ZOSTEROPS

By A. A. CLARENCE (Parkstone, Dorset, England)

Of my birds, I think a pair of Indian Zosterops has given me as great pleasure as any. This, I say, even though I have an Indian Shama who on many a warm night has charmed the silence with notes that would intrigue a Nightingale.

The Zosterops arrived in the late spring and were liberated into an aviary considered suitable to their needs. Luckily the weather held fine for a considerable time and they did not appear to find the English climate anything unusual. In Northern India, the sun deals sunstroke by day, and it can be cold to freezing at night.

The aviary, 15 feet long by 4 feet wide and 8 feet high, was built against a very old brick wall. This was riddled with crevices and holes made by the hand-cut nails of former generations. They formed ideal

hide-outs for spiders and other insects. The wall faced south, and the aviary was also protected from east and west winds. An apple tree sapling, self-sown, grew tight to the bricks. Its branches radiated, and pressing hard against the wire roof, formed a canopy of leaves which effectively kept out rain.

For those who have not seen a Zosterops, let me say that they are small, short-tailed, insectivorous birds, about the size of an English Wren. Their colour is a warm grey-green with a grey-white stomach, which merges into yellowish-green on the breast and lemon-yellow under the beak. The eyes are their most arresting feature. These are bordered with white rims, which have earned them the name of Spectacled Zosterops. Knowing nothing of the nesting habits of these active little birds, I gave them soft, dry meadow-grass and hay. In due course they became interested, and wove the hay into a rough bundle between the fork at the end of a horizontal branch about six feet above ground.

Adjoining this aviary was another, but of larger proportions, being 40 feet long, 8 feet wide, and 12 feet high. It contained some Chinquis Pheasants, a pair of Senegal Touracous, a few parrakeets, and also a pair of Zebra Finches. At the partition top, a strip of wire allowed the inmates to look into the Zosterops' aviary. The Zebra Finches appeared to be fascinated by the "goings on" of the Zosterops, and were desperately anxious to get a closer view of the nest. At last they discovered that a heaven-sent mouse had enlarged a hole, where the wire adjoined the wall, and through this they squeezed.

I don't know what goes on in the minds of birds, but these Zebras had fully made up theirs long before they passed the wire netting. In no time they had that bundle of hay torn to shreds, and were preening themselves on a good day's work. You could almost hear them say "Good-bye to all that"! Later, finding seed only in a trap cage, they were soon caught and transferred elsewhere.

It so happened that two little French poodles were being clipped for show at that time. I threw a couple of handfuls of their brown curly hair into the aviary. With evident delight, the Zosterops seized upon it, and set to work to create a masterpiece of construction. Choosing as before the flat fork at the end of a branch about 3 feet above ground, they tightly wove a small, deep cup as neat as their first effort had been ragged. It was interesting to note that this time the nest was not visible from the next-door aviary. It hung under the fork and was bound to it by two hinges, each about an inch long. Some small feathers were used for lining, and two diminutive, blue-green eggs were laid. These could be seen with the aid of a cane through the wire, to which was attached a small looking-glass.

The little hen sat deep in her cradle, showing only the tip of her beak and tail, while one beady eye, made very visible by its white

spectacled rim, missed nothing that passed. She had the delightful habit of pulling a solitary large white feather over her back when the weather was cold. I do not know exactly how long the incubation took, as she sat close and gave little or no chance of looking into her nest. However, in a seemingly very short time, about a fortnight, she was off hunting for insects.

Two children gathered ant-eggs from under the stones which bordered the paths of the garden, and swept the hay-fields with butterfly nets, catching quantities of flies, etc., from the grass tops. At first the two babies looked like black spiders at the bottom of the nest. They grew fast, and no parents could have been more zealous in caring for their wants. Eventually they left the nest as two grey-green balls of fluff, and were coaxed by their parents to the top of the apple tree and on to the sleeping perch. With the two chicks between them, they made a charming picture. Later on they placed one baby between them—the other had to take an outside seat. Somehow I think that the favoured infant was the hen. It appeared to be smaller.

When the youngsters had grown to full size, and were able to fend for themselves, the parents decided to build a new nest, and pulled the old one to pieces. The cock, however, apparently also decided that he could not tolerate another of his own sex in the aviary, and unseen by anybody, he slew his son, reducing his pretty young head to a raw skull. His daughter continued to live and sleep between the parents as before.

Unhappily the weather changed, and they apparently decided that the conditions were unfavourable for building, this much to my regret, having just bought a colour film.

\* \* \*

## BRITISH AVICULTURISTS' CLUB

Meetings and dinners during the 1957-58 session have been arranged for the following dates :—

9th September, 1957  
11th November, 1957  
13th January, 1958  
10th March, 1958  
12th May, 1958

Will members please note that in future the Meetings will be held on the second Monday in the month, *not* Wednesday as hitherto.

ARTHUR A. PRESTWICH,  
*Hon. Secretary.*

## BREEDING THE STAR FINCH OR RUFICAUDA

*(Bathilda ruficauda)*

By NICHOLAS GRAVEM (Mill Valley, California, U.S.A.)

Of the so-called Australian grass-finches, I personally believe the Star Finch or Ruficauda (*Bathilda ruficauda*) has been rather neglected as an aviary subject and particularly as regards its breeding. Here in California, imported Stars are plentiful enough ; however, aviary-bred birds are sadly scarce. I understand that this same state of affairs also exists, more or less, in Britain. Perhaps a few remarks on breeding these finches, over here, may be of interest.

I breed Stars and Gouldians indoors in cages measuring about 24 by 18 by 15 inches deep. These cages are built in batteries of four in a unit and are truly box-cages with only the fronts open. I have never known Stars use a nest-box like Gouldians ; and they are furnished with one of those tiny, wooden-barred canary travelling-cages, with the bottom knocked out, and fitted within the cage on its side.

It has been my experience that these birds generally, as Gouldians, come into condition and breed during our winter months, going into post-nuptial moult in our late spring or early summer. However, I have found that Stars are very much more flexible than Gouldians with regard to adapting their breeding cycle to the spring and summer of our northern hemisphere.

After mating (by "mating", I mean pairing, not coition), the cock proceeds with most of the work of nest-building, the hen assisting to a minor degree. Compared with a Gouldian nest, this is a very neat piece of work. The nest, built within the canary travelling-cage, is a globular affair with entrance in the side and is usually started with the coarsest material at hand and then receiving an inside lining of fine, dry grass and (supplied) feathers. "Egg sandwich" architecture—so frequently employed by over-zealous Zebras and less frequently by frustrated Gouldian cocks—is seldom resorted to.

Three to five white eggs seem to be the rule, incubated for some twelve or thirteen days. Very little egg-binding seems to occur with Stars, even when breeding is controlled in small cages affording so little exercise. (Gouldian hens, of course, are rather prone to this complaint ; and I find that if a hen of this species becomes egg-bound and, more particularly, if she reabsorbs the egg instead of expelling it, egg-binding will always recur and the only thing to do is to retire that particular hen from the breeding-cage.)

Diurnal incubation is usually shared by cock and hen, with the hen alone incubating at night ; though in occasional pairs both will occupy the nest at night. The incubation patch in the median apterium of the hen is not as easily seen as it is on the abdomen of, say, a hen Gouldian.

I believe cocks of the genera *Bathilda* and *Poëphila* are without this patch—even though they do a large amount of daytime incubating—and perhaps this is why these cocks incubate only during the day and the hens at night when greater heat is required to keep the eggs warm. Both parents also share in brooding duties.

Upon hatching, the young are fed by both parents by regurgitation, with the cock perhaps doing more of the feeding as the nestlings grow, both cock and hen usually being model parents. I believe insect fare is necessary, or desertion will result. I use cut-up mealworms : one worm three times a day upon hatching and increasing the number of worms by one each day until they have fledged. This is along the lines suggested by Mr. Brooksbank in his excellent book *Foreign Birds for Garden Aviaries*. Mealworms are used as a matter of convenience and undoubtedly any number of other insect forms would also fill the bill. I have not found mealworms overheating to the parent birds or otherwise objectionable, at least not while following the rationing schedule as above. Millet sprays are before the birds at all times ; soaked sprays when feeding young. I have had no real success with egg-food, bread and milk, sponge cake, etc., in regard to nestling grass-finches.

The basic seed diet consists of about three-quarters small canary mixed with one-quarter white millet, shaken with a little C.L.O. Most so-called finch seed mixtures are predominantly millet ; mine mostly canary. Also available at all times is a supplement mixture of more or less wild seeds that consists of : water-grass, sweet sudan (red and yellow), brassica, kohlrabi, lettuce (black and white), clover, ryegrass, and phalaris. This latter gives the birds, I believe, more than enough variety. Cuttlebone in its original form is not given. Instead, a mixture of ground cuttlebone, ground oyster shell, and ground boiled egg-shells, in equal parts, with a bit of flaked charcoal added, is supplied. The only green food offered is the small, young shoots from planted rape seed. I am successful with this diet ; and I am sure other aviculturists have equally sound diets, as well as successful systems of breeding and management for grass-finches. I don't believe in dogmatic ideas in reference to things avian.

I leave young Stars with the parents as long as possible after leaving the nest, but still manage to get two nests per pair (infrequently three) per year. The young, upon leaving the nest, roughly resemble young Gouldians, but with darker bills, and completely lack the papillæ-like spots of colour in the malar region, as possessed by the Gouldians ; but, before leaving the nest, the young Stars have well-developed white areas at the commissural point (angle of the mouth), as well as coloured mouth linings. Incidentally, young Stars have quite dark toe-nails compared with the lighter colour of tarsus and toes. Sexing of young prior to the postjuvinal moult is considerably more difficult than with Gouldians (in which case the young hens exhibit darker bills than the

cocks) ; however, the fledged male Stars very soon attempt their small warble of a song.

Young Stars bathe almost immediately upon quitting the nest ; unlike Gouldians, which I find a bit reluctant to bathe. (However, young Gouldians placed with young Stars soon imitate the latter and bathe several times a day ; but when separated from the Stars, these ablutions soon taper off. This would indicate that their innate bathing behaviour can be readily accelerated by visual stimulation.)

One drawback with aviary-raised Stars is that they almost always tend toward xanthochroism ; that is, the red feathering is replaced with yellow or yellowish, quite unlike freshly imported specimens. Most aviculturists claim, I believe, that this is due to a dietary deficiency and particularly as regards live insect food. However, as red in feathers results usually from chemical substances (carotenoids) taken with green stuff, I wonder if live food has any bearing on the matter. I have heard that soya bean, in some form, has been successful with Tanagers in this regard.

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## THE STORY OF A LAPWING

By A. A. CLARENCE (Parkstone, Dorset, England)

Some years ago I was at a partridge "shoot". It was of the "set-piece" kind : every stand marked, with its number embossed in black on a large white metal plate, which was fixed to a rod and stood about 2 feet above ground. At the first stand of the day my position was near the corner of a high-hedged field. There I was surprised to see a Plover standing motionless. I soon realized that it could not fly and without difficulty caught it. I was astonished when I saw that it had only one wing—the other was missing at the shoulder. It had been cut off "clean as a whistle". The skin had drawn together over the bone and there was no blood. A surgeon could not have done a neater job.

I put the Lapwing in a gamebag and passed it to a farm-hand, who was acting as my carrier. This youth collected some worms and gave them to the bird, which was very hungry. At the last stand of the day I found myself in a field which adjoined the one in which I had begun the day. At the base of the number plate lay a severed wing.

No doubt the Plover had struck the plate in one of the fast swooping dives which these birds delight in during the twilight hours when, as though at a given signal, the whole world of night life awakens, and Plover, Snipe, duck, and Curlew break into a cacophony of sound, a chorus of calls, and whirring wings. On the

other hand, the Plover may have mistaken the white plate for one of his own kind, and on a tour of inspection met his Waterloo.

We put him in a rabbit hutch, well supplied with water and earth-worms. Next day he was liberated into a 15-ft. square roofless pen, to which another pen of the same size adjoined. These pens were built on solid sand and were used for rearing baby pheasants. An aperture 10 inches long and  $3\frac{1}{2}$  inches high was at ground level in order to allow the chicks to pass into the second pen, where grass tufts and a dead mouse or two acted as cover and bait for flies.

I knew that Lapwings were quick-eyed birds, but I did not expect this one to find the "bob hole" instantly, the exit being so well below its line of vision. Having examined the second pen it returned to the first, and never faltered or had to look for the opening. Brailed Partridges would wander up and down the wire division all day and never find it.

"Mr. Pee-Weet," as he was called, soon grew tame, and flourished on the worms and insects brought to him by children, who were enthusiastic hunters on his behalf and derived great entertainment from the bobbing and bowing, which he did from the top of a box covered with turf.

The winter set in and he looked very handsome and glossy standing on this box. It was meant for him to shelter in, but he never used it.

In January there was a severe night frost; this proved more than his exposed side could stand. He was found frozen dead on top of the box, much to my sorrow and that of his young friends, who buried him in a boot box, with a wooden cross, flowers, and all!

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## SUCCESES AND FAILURES OF A SCOTTISH AVICULTURIST

By TOM SPENCE (Newburgh, Fife, Scotland)

Ill-luck or bad management, I don't know which, but certainly I have not done well with breeding of birds so far this season. For example, out of about forty Ruddy Sheldducks eggs I have only eight ducklings. The fertility was poor, but there was a dreadfully poor hatch with deads-in-the-shell; and of those that hatched a fair number were murdered by the unnatural wretches of broody hens that I had bought in. I have, however, a nice strong young brood of New Zealand Sheldducks, which by their very strength must invite misfortune on them!

The only lories which have laid have either eaten their eggs or refused to sit on them, and truth to tell I am beginning to lose interest

in them. I still have about a dozen pairs and a good few single birds, mostly hand-tame.

Last year I did very badly and reared very few birds. The only relatively bright spot was the "Foxwarren" Green Peafowl. The Peahen laid no less than 18 eggs before going broody, really three clutches. Of these one was clear and one was infertile because of an imperfect shell. The rest were all embryonated, but unfortunately nearly all of those I trusted to an electric incubator died in the shell. Of those left with the Peahen or with broodies, nine hatched. Had I written sooner, as I had intended, I might have been able to say that I had reared them all without loss, for until they were about seven or eight months old, I had no losses. Since then, however, one was killed (by a broody), one died of "cold weather Pasteurellosis", and two developed such crippled toes that I destroyed them. The survivors, one male and four females, are all good birds.

This year the Peahen has already laid two clutches totalling 14 eggs. The first four hatched, four out of four, yesterday. They look strong, one male and three females, I should say. All the eggs so far candled have been fertile.

My little Demoiselle, a tame one, laid within about ten feet of the dining-room and seemed likely to sit well. The egg, however, was stolen, presumably by the Jackdaws that infest my place, and the shell found under a nearby tree. I was very sad at this and made even more so by the way that her ladyship followed me around as though I had stolen it. Luckily she has laid again and this time I quickly substituted a Barnacle Goose's egg, boiled in coffee and ink and splodged to simulate the Crane's egg. She took to this without demur and is incubating within ten feet of the door! If the egg is fertile I may return it to her when nearly ready to hatch, or I may be tempted to try to rear it myself. I *think* the Stanley Cranes are a pair; so do they most times and they are defending a nest area quite fiercely. My attitude is one of interest quite purged of hope or expectation. The European Cranes are still too young to breed, though they are taming nicely. I have a veritable drove (six) of Vulturine Guinea fowl, but they are all juveniles except for one, and I can't expect anything this season, though they look in better form than any of my birds and are so tame that they follow me closely round their acre paddock.

I have quite a few ducklings of different species of Shelduck and geese, and of these I am particularly watchful over the New Zealand Shelducklings. There are also a few (precious few) baby pheasants.

Of the softbills, the Spreos finally revealed their sexes by laying three infertile clutches at the same time. I know now that I had three females. Luckily I had already a "cock" which I now introduced. He was a real "Peer Gynt" and a-man-for-all-three-of-them.



Two of them (females) laid again and there are now (about) seven young in one nest which all four are feeding. Strangely the third female has not laid again, probably inhibited from doing so by the stimulus of the young. These four get on without a sign of discord, but when I introduced a second male, a beautiful bird the "size of a Jackdaw," there was a most dreadful melée, and later I took out the "bits" which I was able to blow life into and which has recovered. Of course this second "male" even though big, is almost certainly a female, for I have put it beside yet another male which has espoused "her" right away.

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## LONDON ZOO NOTES

By J. J. YEALLAND

The Toucan-Barbets, presumably so called because of the large yellow and black, though not very Toucan-like bill, inhabit sub-tropical zones in the Andes of north-western South America where there are two forms :—

*Semnornis ramphastinus* of Ecuador and *S. r. caucæ* of Colombia. A third member of this genus is the Costa Rican Barbet (*Semnornis frantzii*) of sub-tropical zones in Costa Rica and western Panama. A specimen of the first of these, new to the Collection, has been received in exchange ; it makes a particularly interesting and attractive exhibit at the Bird House.

Another bird not previously exhibited here is the Dusky Miner (*Myzantha obscura*), one of the many Australian Honey-eaters. The name used to be spelt Minah, and, of course, a better one would be Dusky Honey-eater, but there is another, *Myzomela obscura*, already known by this name.

Two White-bellied Storm Petrels (*Fregetta grallaria*) flew on board R.M.S. *Dunnottar Castle* off Ascension. The ship's cat soon killed one and the second was rescued by the wireless operator and brought to London ; it lived only a few days.

Six King Penguins were brought from the Antarctic by H.M.S. *Protector* and presented by the Captain and Ship's Company. A Cape Robin-Chat (*Cossypha caffra*) has been presented by Capt. R. S. de Q. Quincey and two Malayan Coast White-eyes (*Zosterops palpebrosa aureiventris*) by Mr. J. Newmark. An interesting addition to the Parrot House is a Cuban Conure (*Aratinga euops*), also known as the Red-speckled or Euops Conure.

Mr. M. Horwood collected two nestling White-necked Picathartes in Ghana, feeding them mainly, I believe, on earthworms, and a friend of his brought them to London by air. They are strong birds with enormous appetites and they are so far thriving on the insectile mixture used at the Bird House and some mealworms.

Two Maned Geese, another Cormorant, various Gulls and Pheasants, including four Swinhoe's, have been bred in the Gardens. The Green-winged King Parrakeets are nesting and another Swainson's × Red-collared Lorikeet has been bred. The Satin Bower-birds built a flimsy nest of twigs, bamboo and privet leaves. One egg was laid, but it was broken soon afterwards. Four Greenfinches have been bred in the British Birds' Aviary where a Stone Curlew is incubating three eggs. Four Zebra Finches have been bred and there are nests of Blue Tanagers, Black-throated Cardinals, Malayan Glossy Starlings, and Black Crakes.

The Snowy Owls nested as usual and eight eggs were laid. Three of these were given to a Spotted Eagle-Owl whose own eggs were infertile and she hatched all three, of which two are surviving and are now quite large. The Snowy Owl itself hatched several chicks, letting them all die but one which is flourishing and growing fast. An Australian Stone Curlew that was in Mr. Spedan Lewis's collection at Leckford before the war now lives in the centre aviary at the Bird House and continues to lay one or two eggs each year.

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## NEWS AND VIEWS

Miss Phyllis Barclay-Smith represented the Society at the first Pan-African Ornithological Congress held at Livingstone, Northern Rhodesia, on 15th-20th July, 1957.

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The Bronze Medal of the Avicultural Society of South Australia has been awarded to A. Phillips, for breeding the Red-chested Quail.

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D. Lievens, Moerzeke, by Dendermonde, Belgium, has a quite exceptional pair of Mealy Rosellas. In three breeding seasons they produced 32 eggs, of which 30 were fertile and 30 young were reared : 1954, 6 and 4 ; 1955, 5 and 4 ; 1956, 6 and 5.

\* \* \*

The Edinburgh Zoo continues to be successful in breeding Penguins. For 1956, the report is that the King laid 13 eggs from which 8 chicks were reared ; Gentoo, 10 eggs, 9 hatched, 3 chicks reared ; Maccaroni 4 eggs and Ringed 2, none hatched.

The Keston Foreign Bird Farm has recently received a few pairs of rarely imported birds. They are the Crimson-rumped or Sundevall's Waxbill (*Estrilda rhodopyga*) ; Alexander's Cut-throat (*Amadina fasciata alexanderi*) ; and Abyssinian Red-cheeked Cordon-bleu (*Uraeginthus bengalus schoanus*)—all native to Abyssinia.

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Last year a pair of Princess of Wales' Parrakeets owned by C. Newton Capron, Lake Worth, Florida, was triple brooded ; nests of 3, 2, and 4 were reared. So far this season they have 2 young flying, with 4 in a second nest. It will be interesting to see whether they again rear 3 broods.

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Sixty-five members and guests accepted the invitation of the Council of the North of England Zoological Society to visit the Zoological Gardens, Chester, on 25th June, 1957. Mr. G. B. Groundsell, President of the Society, presided at the lunch and welcomed the visitors, and our Vice-President Jean Delacour replied in his own inimitable manner. The Director-Secretary, G. S. Mottershead, and his staff, were untiring in their efforts to make the visitors welcome, and the warmest thanks of all are accorded to them for a very enjoyable and memorable visit.

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Breeding reports : E. J. Boosey, the "Keston" Senegal Parrots have three young flying : "*Darenth-Hulme*," the Green Imperial Pigeons have one young one three weeks old ; Common Mynahs, two flying : Sqd.-Ldr. C. Everitt, Black-crested Finches, two young flying : Major V. Dilwyn Jones, Red-bellied Conure, nest of five reared : R. G. Kirkham, Peach-faced Lovebirds, "now up to the waist in them" ! : C. M. Payne, three Derbryan Parrakeets flying : Captain R. S. de Q. Quincey, Shamas hatched two young, one of which soon died ; the female was killed by a Jay and the male unaided reared the survivor until fully fledged, when the latter, too, was killed by a Jay : R. C. J. Sawyer, Roulrouls laid nine eggs which were given to a bantam ; all were fertile but being rather stale only two hatched ; one young one was accidentally killed, but the other is now three weeks old : Wassenaar Zoo, Spur-winged Plover, four eggs, all hatched.

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Last year Mr. and Mrs. Eric C. Kinsey and Mr. and Mrs. William J. Sheffler made an extensive European tour. During their stay in England many members had an opportunity of meeting them. They especially will be very sorry to learn that since returning home Mrs. Kinsey's health has steadily deteriorated.

The Kinseys established "*Manorin*" thirty-two years ago, and built up very considerable collections of birds, camellias, and orchids. Unfortunately, the time came when Mrs. Kinsey found the strain of supervising the collections too great and it thus became necessary to dispose of them and the property at Manor. And so, in the words of Mr. Kinsey, "*Manorin* is no more."

A. A. P.

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## REVIEWS

DAS BUCH VOM WELLENSITTICH. By CURT AF ENEHJELM. Edited by Dr. JOACHIM STEINBACHER. Verlag Gottfried Helène, Pfungstadt, Darmstadt, Germany. Price 21.50 DM. (approx. 36s.).

Curt af Enehjelm, Director of the Helsingfors Zoo, is well known to all readers of the AVICULTURAL MAGAZINE both for his achievements in the field of aviculture and for his articles on the subject. This "*Book of the Budgerigar*" has been produced with the assistance of Dr. Joachim Steinbacher and, as might be expected, this collaboration between two such well-known aviculturists has resulted in a most comprehensive and informative work. Every aspect is dealt with, starting with a description of the species *Melopsittacus undulatus* Shaw in the wild, the history of its early importations and first breedings, and the development of the varieties from the first mutation known, in Belgium in 1872, to the countless colours which are available to-day. The chapter on housing deals fully with cages, aviaries, and flights and is illustrated with photographs, drawings, and diagrams. Advice is given on buying birds, the points to look out for and avoid being clearly given, and the author emphasizes that the cheapest bird is seldom the best. His recommendations on how to treat birds during the period immediately after purchase is particularly helpful. He also says that in buying Budgerigars it should be borne in mind for what purpose they are required, whether as a pet, for the pleasure of keeping a few birds, or for breeding. He states that, as with all breeding of animals, it is better to start in a small way with first-class specimens.

In the chapter on breeding the following aspects are dealt with—choice of birds, breeding season, number of broods, pairing, laying of eggs, and brooding, young, control of nests, foster-parents, rings and the keeping of a record book, and points out the importance of the latter. There are also chapters on feeding and care of Budgerigars, moult, illness, "*French moult*," tame and speaking birds, and keeping Budgerigars with other birds. Finally, there is full information on colour breeding which occupies more than half the entire book.

There are 6 coloured plates, each depicting two varieties, by the English artist, A. Vowles and 41 black and white illustrations.

P. B-S.

WILDFOWL OF THE BRITISH ISLES. By PETER SCOTT and HUGH BOYD. Country Life, London, 1957. Price 21s. net.

There is no doubt that the group of birds popularly known as Wildfowl, which includes the swans, geese, and ducks, has become much more popular in recent years than was the case formerly, when most people thought of a wild goose or duck only as something to be shot and eaten. This increased interest is due, no doubt, to the very fine pictures one sees nowadays of the various species, drawn by the few artists who specialize in the painting of these birds; and in the establishment of the Wildfowl Trust and its grounds at Slimbridge where the finest collection of wildfowl is to be seen. Very few people have an idea of the number and variety of species of these birds that occur in our own country and a book dealing with them was much to be desired. Such a book would not be of much value unless it were well illustrated, and with pictures in colour; and it must include all the species that occur in Britain.

Such a book has now appeared and we welcome *Wildfowl of the British Isles*, by Peter Scott and Hugh Boyd, as adequately filling a gap, for it contains a full description of plumage, nesting habits, and range, as well as a first-rate coloured illustration, of every species, even including some that are only occasional visitors and some, such as the Mandarin Duck and Canada Goose, which were introduced but have become established with us. There are fifteen coloured plates, some containing three or more species, all drawn by Peter Scott, and although we have seen some of these before in his very excellent Reports of the Wildfowl Trust, they are none the less welcome in this compact form.

The only fault we have to find with an otherwise excellent book is the absence of an index, of which the Table of Contents does not quite take the place.

D. S-S.

THE RING. Edited and published by Dr. W. RYDZEWSKI, Croydon, England. Subscription, 1957, 16s. or 2.50 U.S. dollars.

This private publication was started in 1954 and has now attained a circulation in most countries of the world where bird banding is carried on. It is issued quarterly and is devoted entirely to bird banding, its aims, tasks, results, and methods, and is a useful medium for the exchange of ideas and experience. General articles on banding in various countries have been included, and also notes on trapping techniques, records of longevity, etc. Up to date eleven issues have appeared, including two for 1957. Subscriptions and requests for back numbers should be addressed to the Editor, Dr. W. Rydzewski, 1 Altyre Road, Croydon, Surrey.

P. B-S.

## NOTES

## NOTES ON A COLLECTION OF PARROTS

The following notes on my birds may possibly be of interest to some of our readers. Starting with the successes :—

Roseate Cockatoos.—The cock of this pair is one of the late Duke of Bedford's split-albino Roseates and was obtained from Mrs. Clark, of Maidsmere. Last year the hen laid three eggs, and reared three beautiful youngsters, one of which is an albino. It is white where the normal is grey, its breast is a lovely pink flecked with white, giving a pearl effect, the under-wing feathers are very deep pink—nearly red, it has the red eye, a flesh-coloured beak and feet. From what records I have been able to look up, I believe this is the first albino Roseate to be reared in captivity.

Leadbeater's Cockatoos, reared three youngsters.

Blue Ring-necks, reared two youngsters.

Lutino Ring-necks, reared three youngsters.

Turquosines, reared three.

Splendids, reared one.

Illiger's Macaws, laid three eggs, all were fertile, but did not hatch.

Pileated, hatched two youngsters which lived for three weeks but died of cold when the hen stopped brooding.

Brown's, had three youngsters in the nest on the 2nd March, but all died on the night of the 15th March, when we had snow and 19° frost.

Crimson-wings, laid three eggs, two were fertile but did not hatch.

Derbyans, laid two eggs which proved infertile.

Amazon Parrots, laid two eggs which proved infertile. I am afraid the hen is too old for any further breeding successes.

An interesting happening was that three 1955 bred lutino Ring-necks developed their pink rings; two of these birds were bred by Mr. E. N. T. Vane, the other by Mrs. Clark.

At the time of writing the Cockatoo population at Mount Pleasant is as follows :—seven Leadbeater's, four Citron-crested, seven Roseates, two Gang Gangs, and one Lemon-crested.

ARTHUR LAMB.

\* \* \*

## CORRESPONDENCE

## SEXING SOFTBILLS

How does one sex softbills? Raymond Sawyer returned my other Rothschild's Grackle two weeks ago, and when I put them together they looked as obvious a pair as one could imagine. To confirm this my old bird sang like mad, and they preened each other and he started breaking off twigs in a most business-like manner. Then the "hen" began to pursue the "cock" in a rather half-hearted way and he looked quite dejected. A few days ago the "cock" began to pursue the hen in a decidedly purposeful way, and later I rescued the hen from the ground, luckily before there was any real damage done to her. I still think they are a pair!! As Frost says, these grackles, sing, mate, or fight, quite irrespective of sex.

TOM SPENCE.

DUNBOG,  
NEWBURGH, FIFE,  
SCOTLAND.

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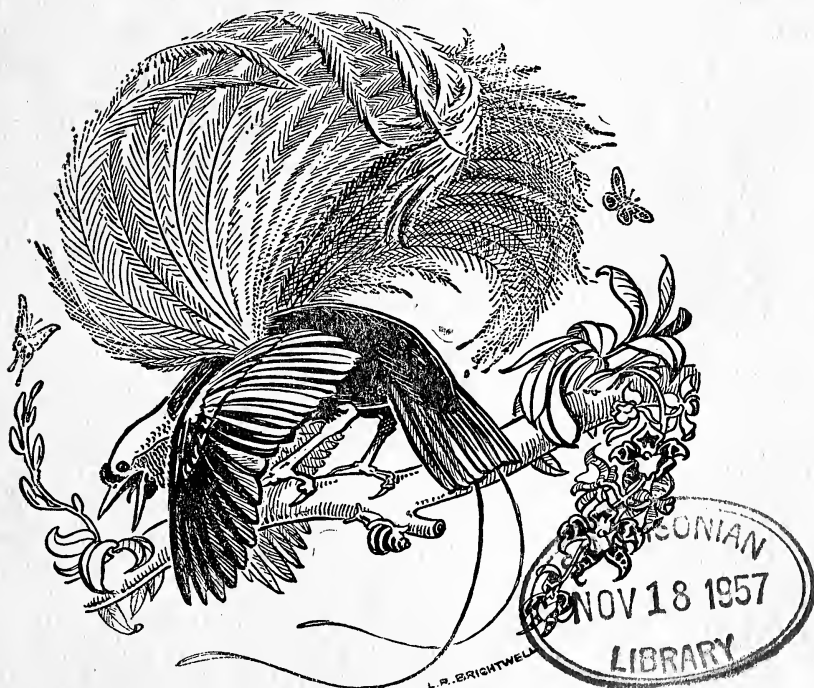
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Birds

Division of Birds

# AVICULTURAL MAGAZINE

K-8



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Founded 1894

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GREEN IMPERIAL AND PIED IMPERIAL FRUIT PIGEONS.

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY  
AND THE AVICULTURAL SOCIETY OF AMERICA

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SEPTEMBER-OCTOBER, 1957

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## BREEDING OF THE GREEN IMPERIAL PIGEON (*Ducula aenea*)

By A. A. PRESTWICH (Southgate, England)

The Green Imperial or Bronze Fruit Pigeon has a very wide distribution, being found in India, Ceylon, Burma, Thailand, Indo-China, Malay Peninsula, Sumatra, Java, Flores, Borneo, Celebes, Philippine Islands, etc. There are, consequently, numerous races, as many as fourteen being recognized.

This pigeon may be common in the wild state, but it is very seldom seen in captivity in Great Britain. The Zoological Society of London received their first specimen in 1866, a second arriving the following year, with three more in 1871: other arrivals were 1878, one; 1883, one; 1884, three; 1892, one; since when there have probably been others. The only record of private ownership is the pair of the Philippine race (*D. a. chalybura*) collected in 1903 by Walter Goodfellow for Mrs. E. J. Johnstone.

Pigeons collectively do not enjoy the popularity with aviculturists they perhaps deserve. The smaller Fruit Pigeons, on the rare occasions they are imported, usually find ready buyers as the majority are so very beautiful. But the larger species, such as the present which measures 15-17 inches in length, would probably prove almost unsaleable, except to a zoo—and that is really the best place for them.

In August, 1954, a London dealer offered us five Green Imperials (their origin being unknown it was, of course, impossible to determine the race) and despite the fact we had no suitable accommodation we bought them. Fortunately, John Yealland, as on many other occasions, both before and since, kindly eased the situation by taking them on deposit at the London Zoo: and there they remained for nearly two years, until May, 1956, when they were finally transferred to our newly constructed range of pigeon aviaries. Having been at the Zoo for so long one would have thought they would have been very steady and that nothing could disturb them. But such

was far from being the case ; they were exceedingly timid and on the slightest pretext would panic, somehow " half-roll " and hang suspended from the roof of the flights—it will perhaps be remembered from past accounts that the flights of these particular aviaries are composed entirely of close-woven wattle fencing, except the roof which is wire-netting. However, they gradually quietened down and at the present time are as steady as one could reasonably expect.

We assumed that if, as we hoped, they attempted to nest it would be some time during March, April, or May. We were reconciled to the fact we had missed the 1956 breeding season and so we were not disappointed that they showed no signs of nesting during the remaining summer months. Autumn and winter passed and they appeared to be troubled not at all by the cold. At the Zoo they had had a heated house to use if they were so disposed, but with us they have only half-open shelters, facing north ; and as often as not they did not use them but roosted out. So they may be considered quite hardy.

We experienced considerable difficulty in pairing them up as in coloration and size the sexes appear to be exactly similar. Finally, mainly as a result of trial and error, we sorted out what we believed to be two pairs ; the odd bird being paired with a surplus Pied Imperial.

Wooden seed-trays were provided as platforms for the expected nests, and roughly formed foundation nests of straw were added as an incentive. Straw, however, proved an unsuitable nesting material. In common with some other Fruit Pigeons this species has somewhat specialized feet, very strong with broad soles, developed to enable it to clamber about branches and so reach fruit that would otherwise be difficult of access. While indulging in courtship pursuit they frequently landed on the platforms, with the result that the straw was dragged out and scattered. Hay proved a quite successful alternative. The actual nests were of a very scanty nature—little more indeed than a few wisps of hay.

At the beginning of January we started dusting the food with powdered cuttle-fish bone—this with a view to obviating egg-laying troubles that might be due to any calcium deficiency. It certainly had the desired effect as none was experienced.

*Pair No. 1.* On 9th March an egg was laid in the sand at the front of the flight. It was unfortunately punctured. On 1st April an egg was laid in the sand at the back of the flight and another was found in the nest : both of these were transferred to domestic pigeons, but they proved to be infertile. A fourth egg was laid on 22nd April, but was deserted after a week or so and was removed on 3rd May. The measurements of three of these eggs were  $42 \times 32$  mm.,  $42.1 \times 32.6$  mm., and  $42.2 \times 32.5$  mm. ; they were pure white with a slight gloss.

*Pair No. 2.* An egg was laid on 27th April, but was thrown out of the nest and broken on 7th May. A second egg was laid on 1st June. The female settled down and as incubation progressed she became increasingly tame, eventually so much so that towards the end of the period she even allowed herself to be stroked while on the nest. Both parents spent a great deal of time on the nest. We were unable to decide whether the male was actually assisting in the incubation or whether he was merely keeping his mate company. During the three or four days prior to the hatching both hardly left the nest. The egg was found to have "starred" on the afternoon of the 20th and had hatched by next morning. The incubation period is believed to have been eighteen days. It is, however, rather difficult to determine this point with any accuracy because the female did not begin seriously to incubate until several days after the laying of the solitary egg.

The nestling in down was dark rufous above and pale rufous-brown below. The female brooded it very closely, so closely in fact that it gave cause for anxiety as the weather part of the time was very hot indeed. This close-brooding lasted for about a week and may have been the reason why the young one appeared to be very slow to develop—at least by domestic pigeon standards. It then grew rapidly. Lest it leave the nest prematurely a heap of straw was placed beneath to break its fall. This, however, proved to be an unnecessary precaution. It was strong and robust and by 11th July was perching on the edge of the nest, managing to reach a perch the following day and thenceforward finding its way round the aviary quite easily.

On leaving the nest the young one appeared to be an almost exact replica of its parents except that it was, of course, very much smaller. It was a little less brightly coloured, with the legs and feet paler, but it had quite a high gloss on the back and wings. It thrived amazingly and was, and is, a great credit to its parents who, in their turn, at all times behaved in a really exemplary manner, even now with never a hint of spitefulness.

*Food.* In captivity the feeding of these large pigeons presents little difficulty: they will thrive on a very wide variety of foods. We have known one species do very well, for a time at least, on damsons and soaked brown bread!

Our own staple food consists of apples, bananas, tomatoes, and dates, diced, mixed together and dried off with coarse biscuit-meal. The drying off is very important, otherwise the birds will soon become very soiled round the head, neck, and breast, and look very unsightly. We have tried several biscuit-meals and found the most satisfactory to be "Stamina" Poultry Biscuit Meal, which we put through a mincing machine. To this staple mixture we add, as available, a large variety of extras, grapes, cherries, plums, pears, pomegranates, green peas, chopped lettuce; boiled potatoes, carrots, rice; soaked

sultanas, apricots, and figs. We do not give any form of milk-sop, soaked sponge-cake, or insectivorous food, as is sometimes recommended for some of the smaller species.

The food for a dozen Green and Pied Imperials takes quite a lot of preparing. It does not, however, need to be chopped very finely. Both these species have enormous gapes and are capable of swallowing incredibly large pieces. In the wild state they are partial to nutmegs which they swallow whole with ease : later, when the peel has been digested, the nut is disgorged.

From the time the young one was hatched a heaped teaspoonful of "Bemax" containing a couple of drops of cod liver oil was sprinkled on the food.

*Water.* The authorities are still somewhat divided on whether this pigeon drinks in the wild state. There can really be little doubt that it is a regular drinker. Naturally, we provide water at all times, but, as yet, have never seen one drink.

*Postscript.*—The young one was separated from its parents on 6th August as they showed signs of nesting again. An egg was in fact laid on 9th August and duly hatched on 1st September. The squab is at present only two days old, and much now depends on the weather.

\* \* \*

As described above, A. A. Prestwich has bred the Green Imperial Pigeon (*Ducula aenea*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

\* \* \*



## KEEPING THE PALE-BILLED WOODPECKER

By J. L. THROP (Curator, Buteyn Bird Ranch, San Luis Rey,  
California, U.S.A.)

There is a group of large woodpeckers found in North and Central America which are regarded as being the most impressive of all woodpeckers. Members of this group practically all fall under different genera, the only reason for calling them a group at all is their somewhat similar appearance. They are all crested and have some semblance of a white V on the back. This group contains the rapidly disappearing North American Ivory-billed Woodpecker and the Mexican Imperial Woodpecker, the largest of all woodpeckers, measuring 20 to 22 inches. These two species, due to their specialized feeding habits, cannot survive the encroachment of civilization. Other members are much better favoured, the Pileated Woodpecker and the one we are now concerned with, the Pale-billed Woodpecker (*Phoeceastes guatemalensis*) are two. Other members are found south of Mexico.

The members of this group have not often been kept in captivity. The feeding habits are so demanding that few people would assume such a burden. George and Evelyn Whitney, of Elsinore, California, did assume this challenge, and the following information was compiled in the hope it may add to the general knowledge of these magnificent birds.

George Whitney, Jerome Buteyn, and Pat Murphy took a trip to San Blas, Nayarit, Mexico, in the early part of May, 1955. They are all bird enthusiasts and the trip was one of observation with the hope of bringing something home for their collections.

A Pale-billed Woodpecker's nest was discovered a few miles from San Blas along one of the forest tracks. The nest was in an old, rotten palm tree about 16 feet from the ground. The palm had broken off at the junction of a previous woodpecker's nest. The wood was soft and pulpy. Two unfeathered young were taken; from the colour of the skin and pin-feathers of the crown, we know they were a pair. One was red and the other was black, the red-crested was the male and was also the larger. The two birds ate mealworms readily, and no meals were missed. The female, regrettably, was accidentally killed before they got home.

Coming back from Mexico, 108 degrees temperature was encountered in the Arizona desert and all the mealworms died. The whole of the last day home the bird survived on those worms.

A short while after the bird's capture several black specks were noticed under the skin. These grew quite large; one of them was lanced and a large grub-like creature filled with blood was squeezed

out. Seven or eight of these parasites were removed and what future effect these might have had can only be speculated.

The bird was fed exclusively on mealworms for the first two months. By this time he ate about fifty a day in two feedings. Other insect life was tried during this time and it invariably caused indigestion. Hard-boiled egg yolk was introduced and eventually the whole of the yolk and part of the white was consumed every day. He had a liking for "mocking bird food", though objected if it was dampened. The most notable thing connected with this bird was his sensitive digestive system.

It was felt that an effort should be made to get the bird on a more varied diet, and since these woodpeckers eat a small quantity of berries and fruits in season, one soaked raisin was fed the bird. For two days he moaned and complained with a stomach-ache. A week later he was again given a soaked raisin and again he complained, but for a shorter time. The raisin was given with increasing frequency until it became a staple item. In season he also got two grapes each day, but he had to be started on these half a grape at a time and still he was upset. The tiniest piece of apple produced the same results until eventually he was eating a piece about the size of a thumb-nail at each feeding.

At one time the woodpecker got indigestion that continued for two days. The Whitneys were at their wits end trying to figure the cause. It was found that when potatoes, for moisture, were put in the bran containing mealworms the worms became toxic and the bird invariably was sick. Apples used for the same purpose caused no ill-effects nor did the flat cactus leaves. These leaves are preferred by most California aviculturists and are cut in strips and laid on top of the bran. He was very fond of bread slightly dampened with milk but this always gave him indigestion so it was given sparingly.

The moult was made gradually so the bird always looked in top condition with a fine sheen on the feathers. George thought it odd, but they never found any of the red crest feathers. In the spring the normally white areas of the bird, the wing patches, and the V on the back, turned bright yellow. George thinks this may be due to the sulphur content in the egg yolks given.

The woodpecker was given a lot of freedom in the house and became increasingly destructive until he was about two months old. At this time he attacked the wood panelled den and in a short time had a hole that soon would have gone through the wall to the outside. He was put in an all-metal cage 4 feet square and 2 feet high where he quickly adjusted himself. For preoccupation he would busily pulverize a piece of two by four wood put in his cage every few days. He disliked a small clapper bell intensely and spent much time worrying it.

George found the bird would go into battle stance, raise the crest as far forward as it would go, when he tapped the water container with

his finger. The bird would dance along his perch and his eyes would take on a glazed stare. It was definitely threatening. The woodpecker never acted this way to Mrs. Whitney.

The loss of the bird was caused after two years in confinement when the Whitneys ran out of mealworms, the principal item in the diet. When their stock got down to 500 they would order more from their dealer. The 500 reserve would last ten days, it generally took only three or four days to receive the worms but they allowed a grace period to cover any delay. This time a severe delay occurred and the worms were not sent until fourteen days after they were ordered. The Whitneys made every effort to get them from local people, but nobody carried them in any quantity and with the diminishing supply of worms the bird soon died. The loss was felt very strongly.

From the trials encountered with this bird, they feel it would be impossible to maintain a captured adult. The Whitneys plan to obtain another youngster of this group and see just how much they have learned.

\* \* \*

## BREEDING OF THE SENEGAL PARROT (*POICEPHALUS SENEGALUS*) AT THE KESTON FOREIGN BIRD FARM

By EDWARD J. BOOSEY (Keston, Kent, England)

I have always had a particularly soft spot in my heart for Senegal Parrots as I had a delightfully tame one for 21 years, and I am consequently very pleased to be able to record the successful breeding of the species here at the Keston Foreign Bird Farm this 1957 season.

It seems that this may be a first breeding. Apparently they are said to have been bred in 1886, before the Avicultural Society had come into existence, but our Hon. Secretary, Mr. Prestwich, who is I think acknowledged to be the chief authority on the subject, wrote to me saying that he had "always regarded the 1886 report as rather more than suspect".

Before the war we had a very fine-looking, and I should have said obvious, pair of Senegals here at Keston, but, although given every opportunity to do so, they never made any attempt to breed, so after we had had them for about three years, we parted with them.

Then after the war we decided to try again, this time with a couple consisting of one we had purchased and one that had been kindly sent to us by Miss Knobel. They are by no means easy birds to sex, particularly single individuals, but Miss Knobel had rightly assumed that her bird was a hen and ours fortunately turned out to be a cock. As a breeding proposition, however, they did not seem a very

promising pair owing to their extreme wildness, both of them—as they still do—dashing panic-stricken into their shelter uttering their worst slate pencil screeches, if anybody went near their aviary.

They were very secretive about their nesting operations and I personally never saw either of them taking the slightest interest in their nest-box, but, as the hen eventually disappeared and as there was no sign of a corpse in the aviary, we assumed that she was sitting. This was in May and some time later, when both birds were in the flight and dashed headlong into the shelter, we decided to shut them in and have a look in the nest-box. The inspection revealed three half-grown young ones, all of which have been successfully reared and are now flying with their parents.

The first one to fledge, which had the curious habit of frequently going back to spend long periods in the nest-box, came out about 6th July, and the other two some four days later. They are very fine youngsters, as will be seen from the accompanying photograph, which my partner Alec Brooksbank took when the youngest of them had only been out of the nest a couple of days or so.

Actually the first intimation I had that they were starting to fledge was when one morning I approached their aviary and was astonished to see a Senegal Parrot sitting calmly on a perch instead of dashing wildly into the shelter! Closer inspection of course revealed its dark eyes, but the only difference from its parents in plumage was its very dark grey crown and pale ashy grey cheeks, as is the case with the other two. Altogether I don't think I have ever seen such grown-up looking young ones—newly-fledged Blue-fronted Amazons, for instance, looking such very obvious juveniles.

The nest-box, measuring about 10 inches square by 24 inches deep with half a coconut husk fixed in the bottom, was hung up under overhead cover in the open flight.

In addition to their staple diet of sunflower, canary, hemp, and peanuts, the parent Senegals were given, while rearing their brood, a considerably increased amount of hemp and various extras. These consisted of boiled potato and carrot as well as a large cube of stale bread previously soaked in sweetened milk to which Virol, etc., had been added. These were given daily and we also offered them boiled white fish—of which my tame Senegal was so fond—but this they refused to sample, so it was discontinued. They always have spinach beet leaves and apple about twice a week throughout the year, and during the rearing period, both were given daily.

Finally, for the benefit of anyone who might not be familiar with the appearance of these small parrots, I would just add that the Senegal is green with a grey head, and with the lower breast and abdomen orange-yellow. Its total length is a little over 9 inches.

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Copyright]

[Alec Brooksbank

THREE YOUNG SENEGAL PARROTS (3 DAYS AFTER THE LAST ONE WAS FLEDGED)

To face p. 152.]



As described, Edward J. Boosey has bred the Senegal Parrot (*Poicephalus senegalus*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

\* \* \*

#### FOOTNOTE

Dr. P. L. Sclater, reporting on the additions to the Zoological Society's Menagerie during May, 1886, says amongst the most noticeable are : " Five Senegal Parrots (*Poeocephalus senegalus*), presented by R. B. Sheridan, Esq., May 5th. Four of these are young birds bred in a large aviary at Frampton Court, Dorchester, under the management and care of the late Mrs. Sheridan. This is of interest, as these Parrots are rarely known to breed in captivity " (*P.Z.S.*, 1886, 318).

In *Bull. Soc. Nat. d'Acclim. de France*, 1888, 667, the Director of the Jardin d'Acclimatation (A. Geoffroy Saint-Hilaire) says that on the 4th April, 1888, he saw a number of " Perroquets Marabouts (*P. senegalus*) " living in the open air at the London Zoo. A letter from Sclater, dated 31st May, is quoted : " We received five of these Parrots in June, 1886 : as we had been assured that four of them had been reared in an open flight, we installed them in the Gardens under similar conditions. Although two of the five birds, an old one and a young, died, it was a rather curious experiment. They passed all last winter (1887-1888) in the open flight where you saw them, without other shelter than several wooden boxes."

I have always regarded the Sheridan event as rather more than suspect, mainly because in the wild state the number of eggs is generally stated to be two. Four certainly seems to be a rather large brood, but the young may, of course, have been the product of two nests. I certainly think it more likely the four young were newly imported birds.

A. A. P.

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## BREEDING OF DOUBLE-WATTLED CASSOWARY

By KENTON C. LINT, Curator of Birds, Zoological Society of San Diego, California, U.S.A.

A Double-wattled Cassowary chick (*Casuaris casuaris aruensis*) was hatched on 30th April, 1957, in the Zoological Gardens of San Diego. In its history of forty-one years this is the first record of a Cassowary chick to be hatched successfully in the gardens.

The Cassowaries are the only members of the group of struthious birds that have become adapted to life in the jungle. One of the most primitive living birds in the world to-day, this entire group has proved to be the most difficult to breed in captivity. Their heads are protected from thorns by a heavy casque and their powerful legs are fitted for crashing through tangled brush rather than for dashing at high speed over open plains. The bare portions of the face, as well as a long narrow space on each side of the neck, are brilliantly coloured in blue, red, and yellow, the variations in shading being an important factor in the separation of forms. About twenty have been described, ranging from north-eastern Australia to New Guinea and small adjacent islands.

The plumage of the Cassowary is much like that of the Emu, having the same well-developed aftershaft. In structure, however, the wing is quite different from those of other struthious birds, the flight feathers being represented by five or six hard, stiff quills. When our Cassowaries are angry the wing feathers are scraped along the fence making a loud, rattling sound which warns one of their temper.

Cassowaries are fierce, pugnacious creatures, able and ever-willing to deliver stunning blows with their powerful feet. Wounded birds are treated with respect by natives in the bush and captive specimens receive watchful consideration from their keepers and must be watched constantly.

Male and female usually cannot be kept together unless in a very large enclosure. A compatible pair of adult Cassowaries is rarely seen in captivity.

We have persisted in our efforts to breed this species in captivity. The male bird and father of this baby has been on exhibition for thirty-one years. He alone incubated three eggs this season. The incubation period was recorded at fifty-four days.

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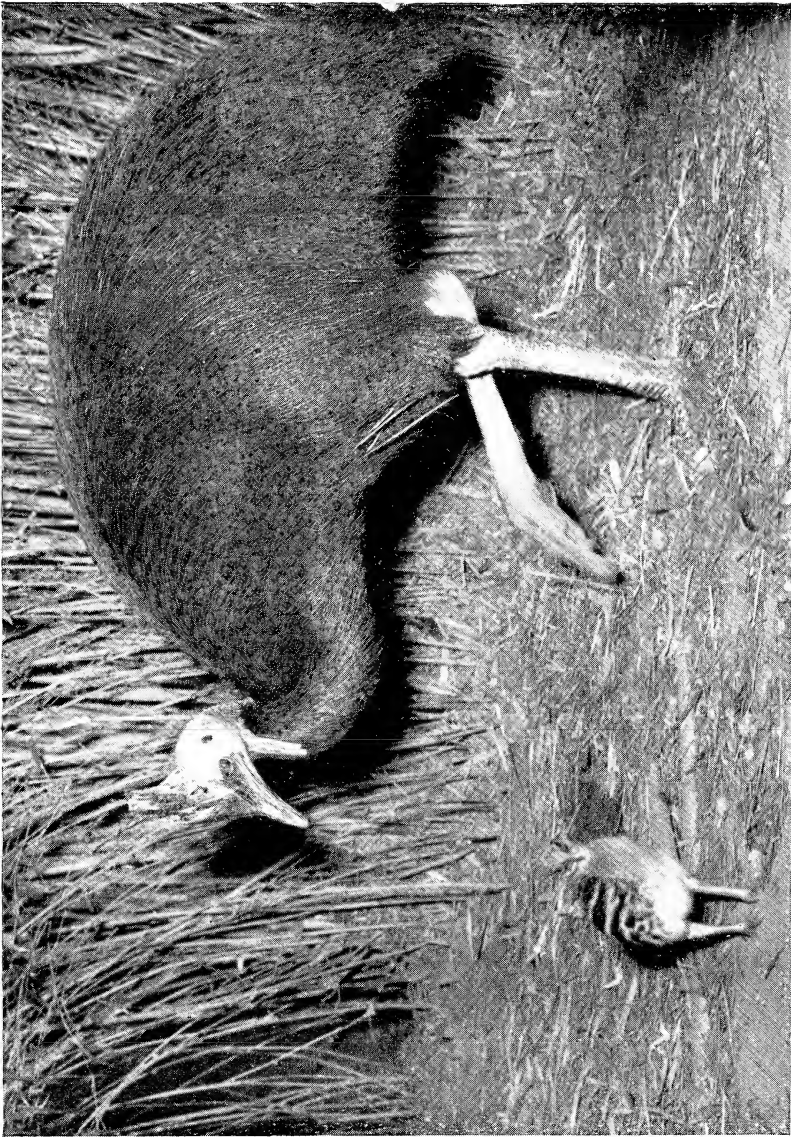


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[Zoological Society of San Diego

Double-wattled Cassowary Chick, *Casuarius c. aruensis*, 4 days old  
showing distinct wattles and helmet plate.

[To face p. 154.



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Male Double-wattled Cassowary, 31 years old, with 4-day-old chick, hatched in Zoological Gardens of San Diego, 30th April, 1957.

To face p. 155.]

Zoological Society of San Diego

## THE IMMIGRANT BIRDS OF MAURITIUS

By BURTON BENEDICT (Floréal, Mauritius)

The aviculturist who steps ashore in Mauritius will feel very much at home, for around him he will see some of the commonest aviary birds of Europe and America. The Indian Mynah (*Acridotheris tristis*) hops along the road ; the Bulbul (*Otocampsia jocosus*) and Green Singing Finch (*Serinus mozambicus*) flit about the garden ; flights of Indian Ring-necked Parrakeets (*Psittacula torquata*) wing screeching overhead ; flocks of Red-eared Waxbills (*Estrilda astrild*) and Spice Finches (*Munia punctulata*) hover about the fields, and colonies of Spotted-backed Weavers (*Ploceus spilonotus*) build their elaborate nests in the casuarina trees by the sea.

These pleasant observations may be interrupted by several reflections—surely these birds are not native to Mauritius, their very names betray their countries of origin as Africa and India. How did they reach this tiny island, barely the size of Surrey, which is some 1,400 miles from the east coast of Africa and over 2,000 miles from India ? It is difficult to imagine a Waxbill or a Mynah flying such distances over water. Clearly they must have been brought, but why ? How ? And by whom ? Wandering further afield one sees more and more of these avian immigrants. The ubiquitous House Sparrow (*Passer domesticus*) is seen in every gutter, though it is the light-coloured Indian variety rather than the one familiar to English and American cities. Driving along, Necklace Doves (*Spilopelia chinensis*) and much smaller Zebra Doves (*Geopelia striata*) rocket up before the car. Everywhere in the island the story is the same. Another question springs to mind—where are the native birds of Mauritius ?

Of the twenty-five species of birds once endemic in Mauritius only nine remain, and only one of these, the tiny, pearly Manioc-Bird (*Malacirops borbonicus*) is at all common. These little softbills, about the size of a Zebra Finch, are to be seen flitting about the garden uttering a metallic chirp. The local name, "Pit-pit," reflects this sound. The Manioc-Bird resembles the much rarer Olive White Eye (*Zosterops curvirostris*) but lacks the white eye ring. The Olive White Eye is more grey than olive, but otherwise resembles the Zosterops kept by aviculturists. The other endemic Mauritian birds include a small Peregrine Falcon, the Mauritius Kestrel (*Falco punctatus*) ; a very rare parrakeet, the Mauritius Parrakeet (*Psittacula echo*), which resembles the Indian Ring-neck but is rather larger ; the extremely rare and beautiful Mauritius Pink Pigeon (*Nesoenas mayeri*) ; the almost extinct Mauritius Cuckoo-Shrike (*Coquus typicus*) ; the Mascarene Blackbird (*Microscelis borbonica*), which is sooty-grey with a blackish crown ; and the Mascarene Flycatcher (*Tchitrea bourbonensis*), an attractive bird with a black head, grey breast, and russet wings and tail.

When the Portuguese landed in Mauritius in 1507 they found no human inhabitants, but a rich and varied avifauna. Most famous of these now extinct birds was the almost legendary Dodo. A living specimen was exhibited in Europe in the seventeenth century. It died in England and was presented to Oxford. Nearly a hundred years later an over-zealous vice-chancellor consigned its moth-eaten remains to the fire. Only the head and a foot were retrieved from the flames, and these rather grisly objects may still be seen at the University Museum, Oxford.

The Dodo was only one of the many birds exterminated in Mauritius by the destruction of the forests, indiscriminate hunting, and the introduction of the rat, monkey, and mongoose. Some of these extinct birds make the aviculturist wistful, particularly the Mascarene Parrot (*Mascarinus mascarin*), which was found in the neighbouring island of Réunion as late as 1845, and the Broad-billed Mauritius Parrot, a large, handsome, nocturnal bird, probably flightless, which was sketched by a Dutch traveller in 1601–1602. Only a few of its bones have been found. Another striking bird which would have graced any aviary was the Dutch Pigeon (*Alectroenas nitidissima*). It had a greyish head, dark blue body, and russet tail and was last seen in 1850.

But what of the immigrants? Some of them have fared no better than the native species. The Painted Quail (*Excalfactoria chinensis*) was introduced in the first half of the eighteenth century, but the Indian Mongoose, imported to destroy rats, has practically exterminated it along with other ground-nesting quail and partridges. Only the Indian Grey Partridge (*Francolinus pondicerianus*), introduced about 1750, is holding on precariously. The Helmet Guinea Fowl (*Numida mitrata*), introduced in the eighteenth century, is now very rare in the wild state, though several domesticated races exist. Only two ducks are to be found in Mauritius, the White-faced Tree Duck (*Dendrocygna viduata*), which may have migrated here from Madagascar, and Meller's Duck (*Anas melleri*), also a Malagasy species. Both are extremely rare.

The Red Avadavat (*Amandava amandava*) was an early importation in Mauritius. It was wiped out by the great cyclone of 1892. The same fate overtook the Cape Canary (*Serinus canicollis*) which was last seen in 1913. A different fate overtook the Java Sparrow (*Padda oryzivora*), which was introduced from Malaya about 1750. It became such a pest that an ordinance was passed to encourage its destruction. It was last seen in 1892. The Grey-headed or Madagascar Lovebird (*Agapornis cana*) was once common in Mauritius, but is now only found in the small neighbouring island of Rodrigues. Both the Pied Crow (*Corvus albus*) and the Indian House Crow (*Corvus splendens*) were introduced into Mauritius, the latter on several occasions. Both were indiscriminately shot and are now extinct in the Island. The Madagascar Broad-billed Roller (*Eurystomus glaucurus*), a large, handsome, magenta

bird, occasionally migrates to Mauritius between October and June. It is nearly always slaughtered on arrival.

Yet some immigrants have managed not only to survive but to thrive. The absence of cyclones over the past twelve years has permitted the increase of many of the small finches. Both the Spice Finch and the Waxbill brought to Mauritius in the eighteenth century are becoming more abundant. The Spot-backed Weaver, known in the local French *patois* under the endearing name of “le schlugschlug”, is increasing so rapidly as to become a pest. The Zebra Dove which reached Mauritius *circa* 1781, is well established.

The Mynah was imported about 1760 to control locusts and grasshoppers which were devastating crops. It has performed this task well and “le martin”, as it is called locally, is the most conspicuous bird in Mauritius. The Ring-necked Parrakeet was brought from India about 1886, and is now considered a destructive pest. The Bulbul is even less popular because of its attacks on ripening fruit. It was introduced as a cage bird and accidentally released in 1892.

Possibly the most beautiful Mauritian immigrant is the Madagascar Fody (*Foudia madagascariensis*) which was introduced some time in the eighteenth century. It is a bird about the size of a canary. The male in the early summer breeding season is a brilliant scarlet, which gives rise to the local name “cardinal”. The wings are brownish and there is a small black diamond shaped mask over each eye. The female is yellowish-brown. They are fairly common birds though extremely shy. Much rarer is the Mauritius Fody (*Foudia rubra*), the ninth endemic Mauritius bird. Only the head and breast of the male of this species are scarlet, the rest being greyish-brown. The diamond-shaped eye patches are much larger than those of the Madagascar species. The female is brownish-grey.

In spite of the existence of many easily bred species and a nearly perfect climate, there is little aviculture in Mauritius. In the central market one can purchase Green Singing Finches, Waxbills, Spice Finches, Ring-necked Parrakeets, and Zebra and Necklace Doves; some degenerate Budgerigars are also offered. Most of these birds are kept as cage birds or in decorative aviaries in gardens. Little attempt is made to breed them. It seems a great pity that no efforts are made to breed some of the rarer endemic birds which, I fear, will disappear all too soon from this lovely Island.

## AVICULTURE AND OUR KNOWLEDGE OF THE PARASITIC WEAVER-BIRDS

By HERBERT FRIEDMANN, Curator of Birds, United States National Museum, Smithsonian Institution (Washington, U.S.A.)

Aviculturists frequently have opportunities to add to our knowledge of many kinds of birds, but because their first interest is properly one of keeping and breeding their birds, rather than looking for new data, they sometimes fail to record detailed observations which would be of use to other students of birds. The purpose of this short paper is to call attention to the need for fuller information on the Whydahs of the genera *Vidua* and *Steganura* and the related Combassous or Indigo Finches.

These birds, either known to be parasitic in their breeding or suspected of being so, are frequently kept in aviaries, which gives the aviculturist the opportunity to add important information of a sort that would be extremely difficult to obtain in field studies of wild birds. Parasitic birds have been a special study of mine for many years and at present I am preparing a comprehensive report on these weavers. Bringing together all the available information, both published and unpublished, has revealed the many and serious gaps in our knowledge of them, and I would urge all aviculturists having any of these birds to keep careful records of any observations on the courtship and breeding habits they may display. I shall be glad to correspond with anyone having notes on them, and hope that by combining many individual notes and experiences there may result an account more useful to, and more meaningful for, all parties concerned.

The need for further knowledge may be made clearer by appending here a series of particular questions to which it is hoped that some answers may be forthcoming from observations on these birds in captivity. First of all a list of the species involved may be helpful. They are as follows:—

Pin-tailed Whydah, *Vidua macroura*.

Blue Whydah, *Vidua hypocherina*.

Straw-tailed Whydah, *Vidua fischeri*.

Shaft-tailed Whydah, *Vidua regia*.

Paradise Whydah, *Steganura paradisaea*.

Black-winged Indigo Finch, *Vidua (Hypochera) chalybeata*.

Dusky Indigo Finch, *Vidua (Hypochera) funerea*.

Brown-winged Glossy Indigo Finch, *Vidua (Hypochera) amauropteryx*.

There are many races of the Indigo Finches, some of which figure in the literature as distinct species—*ultramarina*, *nigeriae*, *camerunensis*, *codringtoni*, etc., but it appears that all are referable to the three species listed above. Another parasitic weaver, the so-called Cuckoo-Finch,

*Anomalospiza imberbis*, is of interest in this connection, but it has not been kept as an aviary bird to any extent.

Specific questions for which answers are needed for each of the above birds are all too numerous. The following are the most obvious and important ones that aviculturists may be able to help solve.

- (1) What is the incubation period (in days) ?
- (2) Are the eggs laid at daily intervals or is there a longer period between them ?
- (3) How many eggs are laid by a single hen in what would correspond to a " clutch " ? Size and colour of the eggs ?
- (4) Which species attempt to make nests themselves and under what conditions do they do so ? (see, in this connection, the note by Karl Nielsen, AVICULTURAL MAGAZINE, 1956, vol. 62, pp. 11-13, where the Black-winged Indigo Finch, *Vidua chalybeata*, is recorded as making its own nest and raising its young in one aviary, and as parasitic on Fire Finches in another).
- (5) When nests are built by the Viduines themselves do both sexes take part in the process ; if only one, which one ? Describe the nest as accurately as possible.
- (6) In such cases is incubation done only by the female, the male, or both ?
- (7) In such cases, is feeding of nestlings done by the female, the male, or by both ?
- (8) How long does the nestling remain in the nest (number of days from hatching to leaving the nest) ?
- (9) In cases where the Viduine species is parasitic on another bird in the aviary, does the parasitic egg hatch before those of the host ?
- (10) In such cases, does the female parasite remove or damage one or more of the eggs of the host when laying its own ?
- (11) In such cases, do the young of the parasite and of the host get along together amicably, or is there aggressive behaviour between them ? If there is, just what takes place ?
- (12) Is there any sign of hostility between the adults of potential hosts and potential parasites, as there is between many small birds and some cuckoos ?
- (13) Does the male indulge in any courtship display in captivity ? If so, how regularly or frequently ? What does the courtship consist of, and how does it differ in different species of Whydahs or Indigo Finches ?
- (14) Describe in detail the coloration and pattern of the mouth markings and gape wattles of the young nestlings. In such cases as may occur where unnatural hosts are used, by virtue of their availability in the cage, note whether there is great dissimilarity between the mouth markings of the young of the host

and of the parasite. If there is, watch to see if the lack of similarity seems to work against the attention the young parasite receives from its foster-parent.

Information on any of these points for any of these species will be greatly appreciated. Needless to say, full credit will be given the donors for any information they may supply. Due allowance will have to be made in interpreting observations for the artificial elements introduced by the fact of captivity, such as the unnatural choice of hosts forced upon a parasite by having to use what other birds the aviary contains, by the absence of "individual distance", etc.

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## FIRST BREEDING OF THE GREATER HILL MYNAH (*EULABES RELIGIOSA*) AT THE KESTON FOREIGN BIRD FARM

By EDWARD J. BOOSEY (Keston, Kent, England)

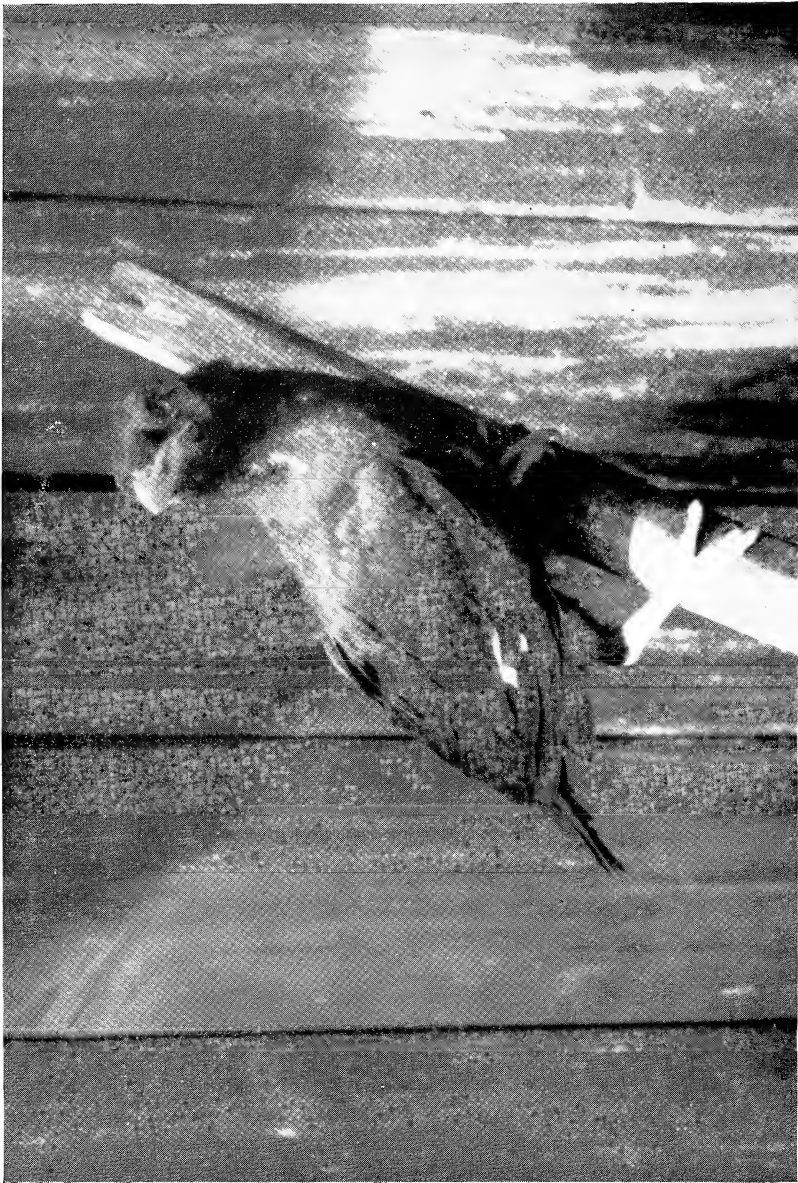
A pair of Greater Hill Mynahs have successfully reared a young one here at the Keston Foreign Bird Farm this (1957) season, and in reply to a letter of mine, Mr. Prestwich wrote saying they have "certainly never been bred before".

The parents are a most amusing and quite celebrated couple as they appeared on television in September, 1956, when an hour's programme was devoted to our Bird Farm.

We imported a number of hand-reared Greater Hill Mynahs from India in 1955 and kept one specially tame cock whom we called Joe. He was given an aviary to himself and the following year was provided with a mate who more or less christened herself Jo-Jo. Incidentally, although they are superficially as alike as two peas, it is possible to sex these Mynahs by the colours of the eyes and legs. As is the case with many of the cockatoos, the cock's eye has an almost black iris, while that of the hen is of a brownish colour, and her legs are of a paler yellow than his, as also are her wattles.

Our pair both emit terrific wolf whistles and this is apt to have a rather disconcerting effect on our female customers, causing them to glance hurriedly round to see which male member of our staff has taken a fancy to them! They also whistle "Pop goes the Weasel", Joe doing the first part, and Jo-Jo finishing it for him with an extra loud "POP . . . goes the Weasel". Joe gives the most accurate and reverberating imitation of the ringing of a bell—a sound which I should have thought was extraordinarily difficult for a bird to reproduce. They also do a rather fruity laugh and a very wheezy asthmatical cough, and are excellent talkers with a very clear enunciation, among their sayings being: "Hullo Joe," "How are you





[AlecBrooksblank

JOEY—THE YOUNG MYNAH.

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[Alec Brookstant]

JOEY WITH ITS MOTHER JO-JO.

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To face p. 101.]

Jo-Jo ?," "Come on Jo-Jo," and a particularly withering "Silly old Crow !" which one of our staff used to say to Joe when he was in an aviary by himself. They are both, particularly Jo-Jo, very devoted to our General Manager, Bill Cummings—as they ought to be, considering the care he bestows upon them.

Being by nature more or less omnivorous they were always given a varied diet, particularly when they were rearing their young one, at which time they were given bread and milk, insectivorous mixture, apples, pears, cherries, grapes, etc. : minced raw meat, chopped dates, and, morning and evening, a rationed allowance of gentles and mealworms. Once—a rather anxious moment—they were given a skinned mouse and I had qualms lest it should be too much, in one go, for the young one. However, my fears proved groundless, for Jo-Jo took it in her beak with its hind legs flapping about outside, and after doing some rather muffled talking owing to this obstruction, disappeared into the nest-box and fed it to the young one, who was none the worse, and, incidentally, was always very noisy when being fed.

Two days before the young one fledged a most extraordinary thing happened. Jo-Jo suddenly decided to murder Joe, and had not my partner Alec Brooksbank happened to pass their aviary at the crucial moment and succeeded in rescuing poor Joe, she would certainly have succeeded. Although the stronger bird of the two, he was in a state of abject terror and she had got him on the ground in the corner of the flight and was starting to hammer away at his head.

Always hitherto a most devoted couple, they had been together in the same aviary for about eighteen months, and I can think of no explanation at all of why she should have so suddenly and viciously attacked him. In any case a very disconsolate Joe was removed from the aviary and the following day the young one perched for some time in the entrance to the nest-box and then went back inside again. The next day it came right out and flew straight down and had a bath ! It was very steady and, although a strong flier, never did any of the usual banging about in the aviary, and I only wish all newly-fledged birds were as self-possessed and sensible.

Actually, if there was to be any trouble between the parents, we originally thought it would be that Joe might attack Jo-Jo, because he was extremely possessive about their only child, and in the early stages did practically all the feeding of it. Incidentally, I may add that the young Mynah is now fully independent and has been taken away from its mother. We naturally wondered what sort of reception Joe would get when he returned to the aviary, but apart from Jo-Jo calling him a silly old crow several times and both of them doing a good deal of whistling, there was very little reaction on either side. The following morning, however, Joe was found dashing about in the aviary and panting with exhaustion, so, although she did not appear to be doing

so at the time, we could only conclude that Jo-Jo had been chasing him about. Rather regretfully therefore, we decided that the only thing to do was to clip one of her wings so that Joe could always easily get away from her. The curious thing is that judging by their demeanour whenever one is watching them, one would still imagine that they are at all times the very best of friends.

Last year the parents went to nest twice, on each occasion breaking their very beautiful, faintly speckled bright blue eggs, but this may have been because their nest had no coconut husk fixed in the bottom, as it had this year. It is true that, from the nesting material supplied, they selected numerous twigs and coarse grass stalks which they deposited in the box, but they did not make a proper nest, and this I think was the cause of the broken eggs. When nesting, they have a curious habit of periodically carrying quite large stones into the nest-box, and these had to be removed from time to time.

As will be seen from the accompanying photographs which were taken by my partner Alec Brooksbank the day after the young one left the nest, it was at first smaller than its mother, and, of course, lacked the high gloss on the black plumage of an adult. Its legs were very pale whitish-yellow, as were the rudimentary wattles which consisted of small, flat patches of bare skin.

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As described above Edward J. Boosey has bred the Greater Hill Mynah (*Eulabes religiosa*). It is believed that this may be a first success.

Any member or reader knowing of a previous breeding of this species in Great Britain or Northern Ireland is requested to communicate at once with the Hon. Secretary.

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## THE BIRDS AT PAIGNTON ZOO

By Captain H. S. STOKES (Longdon, Rugeley, England)

On a recent visit to this Zoo, which was often referred to in our Magazine in Mr. Whitley's day, it was a great pleasure to see the beautiful garden and lake and the wonderful greenhouses all planted with rare and lovely plants, and to find the bird population being gradually brought up again to its pre-war standard. The Paignton Zoological and Botanical Gardens, Ltd., the proprietors of this Zoo, sent an expedition to British Guiana on their own account, and this has resulted in a number of rare and interesting birds and mammals being brought back.

The great tropical house with its nine large compartments and a score or so of small ones has as yet but few birds in it, but includes Sunbirds and a pair of Violaceous Tanagers which were nesting.

One compartment with a small pool was being prepared for a Surinam Jacana (*Jacana spinosa*) which the Zoo has had for some time.

The Parrot house, with its cages of unusual and very practical design, still contains some of Mr. Whitley's old inmates, such as a Blue-eyed Cockatoo and a Green-winged King Parrakeet. There is a good series of Amazon Parrots, including the Yellow-headed, Mealy, Red-throated, Salvin's, Sallé's, and Orange-winged. The Conures also are well represented with the Brown-throated, Finsch's, the Greater Patagonian, and Golden-crowned. There are specimens of the Orange-crowned Gold Coast Parrot (*Poicephalus gularis*), and of Maximilian's Parrot. In this house were also a pair of Abyssinian Touracos and a pair of Double-toothed Barbets (*Lybius bidentatus*) brought from Africa by Mr. Michelmore, the head of the Whitley Educational Trust.

Extensive repairs and renovations have been carried out to many of the houses and ranges of aviaries, and these are now populated by a choice selection of birds, which were shown to me by the Curator, Mr. Travers. A great deal of thought is given to the care and comfort and feeding of the birds, and the result is obvious in their beautiful condition.

A range of about eight tropical aviaries has a good selection of finches, doves, and softbills, and Tinamous of two interesting species. One compartment contains four specimens of the Little Blue Heron (*Florida caerulea*) in its immature white form, another one a pair of Mount Roraima Aracaris (*Pteroglossus roraimae*), brought back by the British Guiana expedition, and thought to be a first importation.

There is a long range of outdoor aviaries, with shelters which can be heated when necessary, containing a series of macaws and cockatoos. Another range with very large flights has Occipital Blue Pies, breeding yearly, and a small collection of pheasants.

The birds of prey range houses among other Raptores a pair of Condors which must have been there for thirty years, the hen laying yearly. Owls are also well represented.

Beautiful paddocks on the hillside contain Sarus, Stanley, Demoiselle, and White-necked Cranes; Cereopsis Geese bred last winter, and Barnacles were nesting at the time of my visit.

Perhaps the pride of the whole collection are two Wattled Cranes, received separately from Africa, the later arrival a young bird. It is greatly to be hoped that they may prove to be a pair.

A small pond enclosure has Rosy Wood Ibises, Sacred Ibises, and Tree Ducks, and another one Black-necked Storks and Pelicans. Black-footed Penguins had bred in this shelter.

The main lake, with wooded islets and beautifully planted margin, has a rather sparse collection of waterfowl, which it is hoped to increase.

Loose in the garden are literally scores of Peafowl, mostly very

tame, and a great attraction to visitors. This is not the place to speak of domestic pigeons, of mammals, of tropical fish and reptiles, all well displayed and in excellent condition.

The Zoo authorities have ambitious schemes in view for the development of a beautiful, wooded valley beyond the lake, with hillside paddocks and rocky quarries for a series of large birds and mammals, and of groupings of plants in their natural orders. This would certainly be a unique addition, though even to-day a visit of two or three days is not too much to devote to this Zoo.

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## NOTES FROM THE WILDFOWL TRUST

By S. T. JOHNSTONE (Slimbridge, Glos., England)

Among the recent arrivals at New Grounds the most important addition to the collection has been a fine consignment of birds made available by the courtesy of the Department for Internal Affairs of New Zealand. This consignment included three pairs of New Zealand Brown Duck (*Anas aucklandica chlorotis*), three pairs of Blue or Mountain Duck (*Hymenolaimus malacorhynchos*)—a species which we understand has never before been kept in captivity, and two pairs of New Zealand Scaup (*Aythya novæ-seelandiæ*). These birds have now finished their quarantine and are well established in our pens.

The arrival of two male Kelp Geese (*Chloëphaga hybrida hybrida*) from the Falkland Islands means that all species of geese are now represented in the Wildfowl Trust collection. These were accompanied by two pairs of Flightless Steamer Duck (*Tachyeres brachypterus*).

After many years we have at last succeeded in obtaining and establishing a Bufflehead (*Bucephala albeola*) at Slimbridge. A pair was sent to us from North America but unfortunately the male died on arrival. The female was force-fed on small sections of eel for some days and is now out on the main diving pond, in perfect health.

Common Scoter (*Melanitta nigra nigra*) have also been established for the first time, and a further addition has been a fine pair of Hooded Merganser (*Mergus cucullatus*) reared and presented to us by Mr. Pilling of Seattle.

The fine weather of May and June has helped to make 1957 the most successful breeding season yet recorded. So far ninety species have nested, among the more interesting being the Magpie Goose (*Anseranas semipalmata*), Bewick's Swan (*Cygnus columbianus bewickii*), Ringed Teal (*Anas leucophrys*), New Zealand Scaup (*Aythya novæ-seelandiæ*), Lesser Scaup (*Aythya affinis*), Indian Comb Duck (*Sarkidiornis melanotos melanotos*), Common Golden-eye (*Bucephala clangula clangula*), Barrow's Golden-eye (*Bucephala islandica*), Goosander (*Mergus merganser merganser*) and Smew

(*Mergus albellus*); a Spurwing Goose (*Plectropterus gambensis gambensis*) laid one infertile egg. At the time of writing there are some 650 young birds, and although it is early yet it seems likely there will be a record number of birds reared.

The Bewick's Swan was unfortunately disturbed from its nest by the visiting public during the early days of incubation and its five eggs were not hatched. I am pleased to say that she has started a second clutch and we hope to arrange for her to have a more peaceful time brooding the second lot of eggs.

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## THE RED-BILLED CHOUGH

By S. PORTER (Derby, England)

Though the distribution of this bird covers an enormous area, from the West Coast of Ireland and the Iberian Peninsula, through Southern Europe and North Africa (a colony inhabiting one of the smaller Canary Isles), the mountain ranges of the Mediterranean, Syria, Abyssinia, Arabia, Southern Russia, Afghanistan, Central Asia, through the Himalayas to North-East China, its habitats are more or less remote localities required by the birds' specialized economy.

These are high cliff faces often rising sheer out of the sea or high altitudes on great mountain ranges, usually in the most lonely and desolate places of the world. Mountaineers have said that the Chough is the last avian inhabitant of the great peaks seen before reaching the utterly barren regions of snow and ice which will not support feathered or in fact any other kind of life.

The following is taken from a recent book, *The Sherpa and the Snowman*, by Charles Stonor, page 104 :—

"Choughs were much in evidence to-day, and the two kinds found in the Himalayas were both the Red-billed (Tchong-moh to the Sherpas) and the Yellow-billed (or Tchong-Dzum) clever, happy birds, very characteristic of the Sherpa countryside, much as are the rooks amongst ourselves. The climbing expeditions meet them right up at 26,000 feet and even higher, though what takes them to altitudes that are totally devoid of life, it is hard to imagine.

I had met them several times already, bustling about in the village fields, prodding in the ground with their long scimitar beaks, and streaming down the valleys in loose flocks on their way to their feeding grounds and back. Both kinds go together in casual association, but their habits are different, the red-billed do not find their way up so high, or in such large flocks, and they have a jackdaw-like call, as compared with the eerie banshee piping of their relative." And again, from the same source :—

"My attention was called to a vast flock of yellow-billed choughs

swarming overhead, a thousand or more strong ; they were engaged in some spring courtship flight, spread out when we first saw them in a great dark cloud, like a drifting plume of smoke or a swarm of gigantic bees. Each and every bird of the flock, wing quills spread apart, was dipping and diving, planing and weaving, in and out of the cloud of its fellows, now solitary, now a member of a little group broken away and displaying as a unit. The whole assemblage was sometimes a continuous flock, sometimes splitting up into parties swarming together to reunite as a rounded whole or to straggle out streamer-wise. Surely this must be one of the most wonderful spring flights among birds. Even the hard-bitten Sherpas were impressed and stopped to watch as the choughs began to spiral in wide circles, until they soared away in silence, out of sight of the naked eye, at a height of anything between twenty-five and thirty thousand feet.

It has become a common experience of mountaineering expeditions in the Himalayas to meet choughs and other birds at immense altitudes. Apparently the lack of oxygen and the conditions of the atmosphere has no effect on them at all ; an extraordinary condition of affairs for which the science of physiology does not so far give an explanation.

To the ordinary outsider it suggests a remarkable body mechanism, whereby a quick-moving creature such as a bird, all of whose vital processes must act with such infinitely greater speed than our own, can climb to the thinnest atmosphere, where we can hardly scrape along with artificial helps, and in a matter of seconds adjust its every movement to a totally different set of outside stresses and strains."

Yet strange to say the Chough is equally at home down at sea-level on the stony beaches at the base of the cliffs in the few places where it survives in the British Isles.

It is in the mountainous regions and on the cliff faces that one sees how useful is the long, slender down-curving bill which, with the legs and feet, look as if they had been cut out of coral, for not only do they look like red coral, but they have the feel and texture of that substance. The bill is quite different from that of any other member of the Crow family, except that of its near relative the Yellow-billed Chough, though with this bird it is shorter and less curved. Neither does any member of the Crow tribe use his beak with such facility. The Chough can use it to work round corners or under rocky ledges, for prying under flat stones, exploring fissures and crevices, seeking out insects which are forced to hide away from the bitter winds which so often blow at hurricane force in those high regions.

In those lofty realms where our bird makes his home there is great competition in the plant world for an adequate anchorage, so there is little loose or free soil. It is matted and turfy and held together by the roots of rock plants. It is here that the Chough uses his beak as a



pickaxe to hack into these masses for insects or their pupae, which in the cold altitudes, lie torpid for long periods.

I have watched the birds digging out tiny pockets of earth on cliff faces which contained the nests of minute ants and unearthing ground spiders which seem common in high places, it's then that the beak is used as forceps or tweezers to pick out the edible bits in the debris. In fact the Chough seems to spend his time either probing, exploring, and excavating the stony world in which he lives in his never-ending search for food—or in aerial acrobatics. Though there may be swifter fliers, such as the dashing and meteor-like Peregrine or the speeding Alpine Swift, scything its way with incredible speed through the high atmosphere, and which must be the fastest flyer of all birds, few, if any, have the effortless and graceful flight of the Chough.

It seems not so much to use its power of flight to get from one place to another, as for the sheer joy of flight alone, and incongruous as it may sound when speaking of a crow, its flight has the lightness of thistledown borne on the wind. Its displays of aerial prowess are enhanced by the settings in which they are given, which are in the most spectacular, majestic, awe-inspiring, and least frequented by man, of all the world's most solitary and lonely places.

Once common around the high cliff faces of our Southern and Western shores, the Chough has now, alas, been reduced to the status of one of our rarest breeding birds, colony after colony vanishing during the last 150 years. Its near extermination has been brought about by two main agencies, by the egg collectors who have almost every accessible nest marked down and who receive word from the local inhabitants when the eggs are ready for taking. The second reason for its rapid decline is shooting, firstly by scientific skin collectors in the nineteenth century and by that fraternity who found pleasure, and still do, in massacring our wild birds. In the last century sea-bird shooting was one of the favourite recognized "sports" for holiday makers, and guns and boats could be hired on the spot.

In Cornwall and Wales the birds' habit of digging has been its undoing. Farmers with cliff-land farms have seen the birds probing about in the newly-sown wheat or oat patches on the top of the cliffs and refusing to believe that the birds were not after the freshly planted seed were glad of an excuse to slaughter them. The belief that the birds eat grain is very prevalent in Cornwall, where a few pairs of Choughs still linger.

Considering that the Red-billed, or Cornish Chough, as it used to be called in these Islands, is such an outstanding member of the Crow tribe and that it is so well known in folklore and tradition—Shakespeare speaks of "the russet-pated Chough"—it is very surprising how very little has been written about it in avicultural literature.

In all the years of keeping birds I have never seen or heard of but one offered for sale and that was at a fantastic price. Yet they are sure to be seen at any of the larger bird shows in this country where the owner can be certain of getting a "First" in the "Large British Softbill" class. In fact at a leading show in recent years I heard that nine had been entered for competition!

I had kept the other species, the Alpine or Yellow-billed, but gave them away to a local public aviary before embarking on a long voyage abroad. I was rather sorry about this afterwards, for the birds turned out to be a true pair and nested every year and hatched young, but failed to rear them as they were not supplied with suitable food.

However, within recent years a pair were known to be on sale, and it was more or less to save their lives that I bought them. When I got them home they certainly looked a "poor buy". Owing to unsuitable food which lacked the necessary vitamins, there were large areas of the plumage which lacked pigment, being a dirty putty colour instead of the normal glossy purple-black. The naturally brilliant coral-coloured beaks and legs were pale and dull, especially in the male bird, whose bill was overgrown and who had a nasty chesty cough. The hen's beak was badly crossed which made it difficult for her to feed.

On being put into a large aviary with rocks and gravel, a large bath, plenty of room to fly about and a shed (which they loved), their joy knew no bounds. For the first few weeks they spent their time alternately bathing and whetting their beaks on the flat stones in order to get them into the proper shape again.

The discovery of the opening which leads into the shed was the source of great interest to the birds. At first they discussed the matter on the ground, then flew on to the bottom ledge of the opening, craning their necks inside so far that they nearly fell over, all the while conversing with each other. Sometimes the cock would push the hen in and she seemingly terrified would rush out and then try to push the cock in. This went on for a day or more and when at last they decided it held no terrors for them, they simply loved it, mainly I think because out of a window they could see if any one approached from the house. Tamer or more charming birds I never had. They are quite without fear.

The Chough from all accounts is a bird with a happy disposition; though most birds of the Crow family are quick-witted (they have to be to survive), intelligent and cunning, some have a sense of humour—but this bird is quite different, it seems to dance its way through life, always happy, light and airy, full of grace and gaiety. It is interested in what one does, but the interest shown does not give the impression of noseyness. There is always a joyous welcome when

one comes in sight, though they often remain silent when a stranger appears.

In the spring of 1956 the birds went to nest in half of a large barrel which had been cut in two and placed end up on a platform near the top of the aviary. A large hole had been cut in the side of the barrel and the whole simulated a small cave. This was taken to with alacrity. Soon the birds had a large structure built in the centre of which was a small depression about the size of an ordinary Blackbird's nest, and in time five eggs were laid. These were duly incubated but, alas, failed to hatch, as they proved to be infertile. This was no doubt owing to the low condition of the birds which had been looked after during my prolonged illness by someone who, though professing to be an ardent aviculturist, had neglected the birds, and finally let me down altogether, until my kind friend Fred Logan stepped into the breach.

During this nesting period the cock became extremely aggressive, in fact he has never lost his pugnacity. He had a specialized and cunning method of attack. As soon as he felt one's eyes were not on him, he made lightning dashes for one's head, which he attacked with his feet, inflicting quite nasty abrasions.

The attempt at reproduction seemed to give him added confidence and he became very aggressive towards humans he knew, though I could never decide if this was really pure bad temper or just very aggressive and boisterous play. When he got himself worked up he would crouch on the ground, feet well apart, feathers standing on end, head between his legs and wings alternately waving in a kind of rowing motion. His attacks on humans greatly annoyed the hen, who would take a flying shot at him and knock him on to the ground, where the pair, a tangled ball of feathered fury, would fight it out. In a few minutes after this was over they would be their own friendly selves towards each other.

Bathing they love, and if by accident they have been closed in their shed for a period of several hours, they both indulge in repeated bathing which lasts for an hour or so.

They live mainly on a good insectivorous mixture with as much live food as possible. Unlike other members of the Crow family they refuse any type of vegetable food, even cheese in bulk they disdain, though I use it, finely grated, in their food. Nearly all insectivorous birds like cheese, especially Jays and their kindred. As mentioned before, in a wild state Choughs feed to a great extent on the contents of the nests of small species of ants, but my birds when given "uncleaned" ant eggs in bulk with nest debris and living ants, were simply terrified and have always remained so, keeping as far as possible from the container. They are very fond of mealworms and woodlice.

The Choughs live amicably with a pair of Blue Crossoptilons, though perhaps "amicably" is hardly the right word . . . "armed truce" would perhaps be better. I am sure they would be unsafe with any other birds, either their own size or smaller. The Crossoptilons live in a state of haughty disdain, ignoring the Choughs, as far as possible until the latter tweak their long flowing tails. However, with young Crossoptilons it's quite a different matter. These are chased and chivvied and generally tormented until they hide away and would rather starve than come out of their hiding place.

Many so-called sub-species of the Red-billed Chough exist in the imagination of scientific ornithologists, five being recognized in the U.S.S.R. alone, the differences being usually in the length of the third primaries, the central tail-feathers, or the legs; these being only a question of millimetres. But to casual observers the whole genus appears to be more or less uniform.

\* \* \*

## LONDON ZOO NOTES

By J. J. YEALLAND.

The Cambridge French West Africa Expedition, working in the Gabon, has sent two Cameroon Spotted Honey-Guides (*Indicator maculatus stictithorax*), the first of the Indicatoridae to be received here. This race, like most of the Honey-Guides, is not brightly coloured, rather resembling a very small and dull coloured hen Satin Bower Bird in general pattern, but for a variety of reasons the family is of great interest.

The Honey-Guides are a small family (eleven species according to Friedmann; thirteen according to Peters) of four genera and all inhabit Africa with the exception of the Orange-rumped of the Himalayas and a race of it ranging from northern Assam to northern Burma, and the Malayan Honey-Guide of Siam, the Malay peninsula, Sumatra and some adjacent islands.

The habit of guiding rats (honey badgers) and human beings to bees' nests is known to occur in the Greater Honey-Guide and the Variegated or Scaly-throated. The guiding call of the former is a chattering noise. This appears to be the best known of the family and has a wide range over Africa southward of the Sahara wherever the habitat is suitable.

The birds appear not so much interested in honey as in the comb and larvae of bees which, of course, they could not obtain unaided, and it is only after the ratel or man has taken the bees' nest that the bird (almost always alone, but occasionally there are two) comes to feed on the remaining fragments. Bees and other insect life are also eaten.

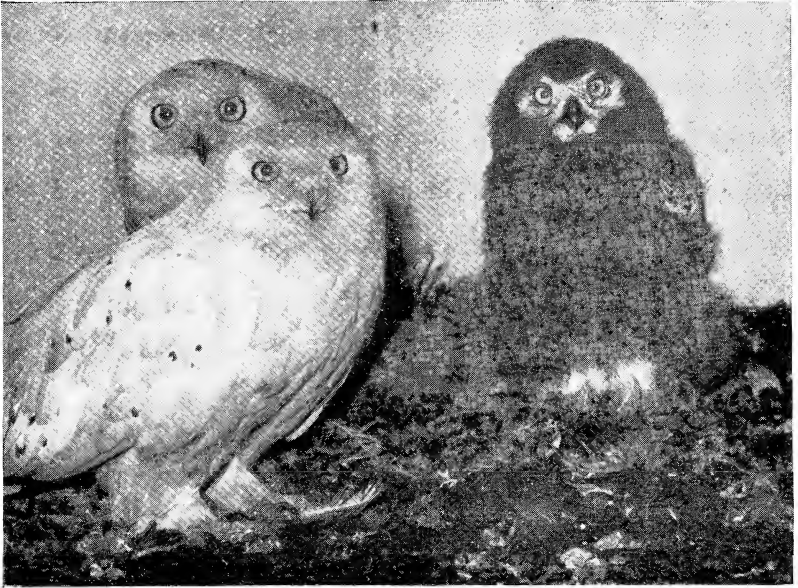
The Greater Honey-Guide is, according to Friedmann, known to be



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THE WHITE-NECKED PICATHARTES (*Picathartes gymnocephalus*).



A PAIR OF SNOWY OWLS AT THE LONDON ZOO AND THEIR YOUNG ONE  
HATCHED DURING JUNE.



*Copyright]*

*[Zoological Society of London*

YOUNG SNOWY OWLS HATCHED AND REARED BY A PAIR OF SPOTTED  
EAGLE-OWLS.

*To face p. 171.]*

brood-parasitic on thirty-five different bird species including Barbets, Woodpeckers, Kingfishers, Bee-eaters, Wood Hoopoes, Hoopoes, Thrushes, Starlings, Weavers, Swallows, Ant-eater Chats and Sparrows. All known eggs are white.

The young of at least some Honey-Guides are furnished with a sharp hook on both upper and lower mandibles, these hooks dropping off after some days. Whether the hooks are employed in the killing or ejection of the foster parents' young is not known. It would surely be very difficult in the case of some hole-nesting foster parents for the Honey-Guide chick to evict the others, but whatever the method, and there is evidence of both, the Honey-Guide is eventually the sole survivor of the brood.

The Greater, Lesser, and Lyre-tailed perform flights in which a noise is made, presumably by the outer tail-feathers, when the bird dives. The skin of these birds is said to be very tough—evidently a protection against the stings of bees.

Since the foster parents never eat honeycomb, the young Honey-Guide cannot feed on it until it is able to fend for itself, when, presumably, it learns by watching the adults. Why there should be this desire for bees' wax and how it is digested; how the guiding process was evolved and how rats and native people could originally have learned that it was advantageous to follow a chattering bird are among the many problems concerning these strange birds investigated by Dr. Herbert Friedmann, but although a great deal of information about them is set forth in his work, "The Honey-Guides" (*United States National Museum Bulletin* 208), much remains to be discovered.

Honey-Guides have been kept in captivity. Mr. Sydney Porter wrote of an immature Greater Honey-Guide that he rescued and kept in Southern Rhodesia (*A.M.* 1927, p. 152) which he referred to as the Yellow-throated, but he was not alone in making this mistake, for the young of this species is so different in plumage from either parent that for a long time it was considered another species. Friedmann says, "A South African aviculturist, W. R. Carthew, informs me that he has kept both greater and lesser honey-guides for over a year. . .".

Other birds new to the Collection are a pair of the Malayan Bustard-Quail (*Turnix suscitator atrogularis*) presented by Mr. G. H. Newmark, who also sent an Orange-headed Ground Thrush and a Black Racquet-tailed Magpie; and an Eastern Waxwing (*Bombycilla garrulus centralasiae*) presented, together with a pair of Crested Black Buntings, a Fokkien Grey-headed Crow-Tit and a Grey Starling, by Dr. K. C. Searle. Messrs. Brooke Bond have given two Baillon's Aracaris and two Purple-crested Touracos; three Common, three Ring-necked, and two Mongolian Pheasants have been received in exchange.

The Bustard-Quail are not, of course, Quail, but are of the same Order as the Bustards, Cranes, Rails, Kagu, etc. The females are

larger and more boldly coloured than the males and are said to be very pugnacious during the breeding season. The males incubate the eggs and care for the young. Members of this family are also known as Button Quail or Hemipodes, and the Andalusian (*T. sylvatica*) of north-western Africa and the southern parts of Spain and Portugal has on three occasions been found in England, but these were generally regarded as escaped birds, though, as Newton says, "easily satisfied persons have admitted the species as a 'British Bird'."

The Eastern Waxwing is much like the more westerly bird, but a little paler and greyer.

Three Snowy Owls, the first to be bred in the Gardens, have been reared, two by a pair of Spotted Eagle-Owls and one by the parents which have nested each year for several years, but have not previously kept the chicks alive for more than a day or two. The Malayan Glossy Starlings sent by Dr. Searle several years ago have reared two young, one in each nest. This starling was bred in 1931 by Mr. A. H. Isenberg in California (*A.M.* 1931, p. 23), but has not, so far as I know, ever before been bred in this country. The young are quite unlike either parent, being grey on the upper parts and whitish streaked with dark grey underneath—rather like a female Amethyst Starling. The nests were built in a crevice of the rockwork.

The Black-throated Cardinals have built five nests and hatched a few young ones, but have not yet succeeded in rearing any. The old breeding pair of Green-winged King Parrakeets have bred only one this year; four Quaker Parrakeets, yet another Swainson's × Red-collared Lorikeet, Cockatiels, Masked Lovebirds, another Green-backed × Grey-headed Gallinule and some Pheasants have also been bred. A pair of Sarus Cranes nested but did not hatch their two eggs.

One King Penguin chick has been hatched and a second pair are still incubating an egg.

A North American White-headed (or Bald) Eagle has died after nineteen years in the Gardens. The oldest inhabitant among the birds of prey is a Bateleur Eagle that came in 1919.

The White-necked Picathartes sent from Sierra Leone four months ago has died from tuberculosis, a disease which it may have contracted in Africa, for Blount states that, in domestic fowls, "Except in those rare instances where the infection is passed via the egg to the chick, the natural incubation period is long, never less than five months." Whether the incubation period is the same in smaller birds is not known, but the disease is generally associated with aged birds.

Looking through the 1927 volume of the Magazine I noticed an article by Miss Knobel describing a visit to Mr. Spedan Lewis' collection of owls at Wargrave. Mention was made of a tame Turkestan Eagle-Owl, a bird which came here in 1950 and which until this year has laid and incubated a single egg each summer.



## BRITISH AVICULTURISTS' CLUB

The fifty-eighth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Monday, 9th September, 1957, following a dinner at 7 p.m.

Chairman : Mr. G. T. Iles.

Members of the Club : Mrs. J. R. Alderson, Miss J. Barnes, P. C. Bath, A. W. Bolton, Miss K. Bonner, W. Brain, Captain A. A. Clarence, C. W. G. Creed, Sqd.-Leader C. Everitt, Mrs. C. Everitt, Miss R. M. Ezra, A. W. E. Fletcher, Miss S. A. Fothergill, Miss E. G. Ganner, J. C. Garratt, Mrs. O. S. Gent, Dr. E. F. Gleadow, F. Grant, A. V. Griffiths, H. J. Harman, M. Scott Henderson, M. Hessey, Miss S. I. Hobday, H. J. Indge, Mrs. P. Ingram, F. E. B. Johnson, F. T. Jones, Miss S. R. Joseph, Miss E. M. Knobel, Miss M. H. Knobel-Harman, Dr. F. B. Lake, E. C. Lewis, Mrs. E. M. Lonsdale, P. H. Maxwell, A. F. Moody, F. Mosford, G. S. Mottershead, K. A. Norris, A. A. Prestwich, S. Sanderson, R. C. J. Sawyer, A. C. Soanes, E. O. Squire, E. N. T. Vane, C. H. Wastell, Mrs. C. H. Wastell, Mrs. G. Wheatley.

Guest of the Club : Field-Marshal the Rt. Hon. Viscount Alanbrooke, K.G., G.C.B., O.M., D.S.O.

Guests : B. T. Askew, A. Bangay, Mrs. A. Bangay, Mrs. M. E. Blundell, A. R. Bull, A. Cameron (Wellington, N.Z.), Mrs. D. Carson-Roberts, R. H. A. Caunt, B. Chadwick, Mrs. M. Davies, Mrs. S. Demel, L. G. Ellis, Mrs. L. G. Ellis, Miss H. Frampton, Major J. Fletcher, Mrs. J. C. Garratt, Mrs. E. F. Gleadow, G. Gould, Mrs. H. Gould, L. W. Hill, Mrs. L. W. Hill, Miss R. Hill, Mrs. F. E. B. Johnson, Mrs. F. B. Lake, M. H. Letts (Auckland, N.Z.), Mrs. E. C. Lewis, Miss D. G. Lonsdale, Mrs. A. F. Moody, E. E. Morrell, Mrs. J. F. Rodgers, F. H. Rudkin (California), Mrs. F. H. Rudkin, P. W. Seligman, Mrs. P. W. Seligman, R. Stone, Mrs. E. N. T. Vane.

Members of the Club, 48 ; guests, 37 ; total, 85.

After the Loyal Toast, the Hon. Secretary proposed the health of Gerald Iles, a founder member of the Club, who is due to sail for Montreal on 9th October.

The Chairman welcomed Mr. and Mrs. F. H. Rudkin, just arrived from California, and expressed the pleasure of all in the attendance of Miss Knobel and E. N. T. Vane, both of whom were in process of recovering from serious illnesses.

Introducing the speaker for the evening the Chairman recalled that it was the third occasion on which Lord Alanbrooke had visited the Club for the purpose of showing films.

Lord Alanbrooke then showed two of his coloured films taken in Spain and Holland, in May, 1956. The first was devoted to the Bee-eater, Black-winged Stilt, Pratincole, and Purple Heron ; and the second dealt with the Long-eared Owl, Great Crested Grebe,

Black-tailed Godwit, Spoonbill, Black Tern, and Ruffs at a display-ground.

Needless to say both films were of the very high standard we associate with Lord Alanbrooke. The large audience showed by its prolonged applause that it fully appreciated the patience and skill of the photographer in securing so many remarkable pictures.

The next meeting of the Club is on **Monday, 11th November.**

ARTHUR A. PRESTWICH,  
*Hon. Secretary.*

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## NEWS AND VIEWS

Dr. W. C. Osman Hill, Prosector, Zoological Society of London, has been seconded to Emory University, Georgia, U.S.A.

\* \* \*

Karl Plath, Curator of Birds, Brookfield Zoo, Chicago, has been made an Honorary Curator, Chicago Natural History Museum.

\* \* \*

There are now 26 Emus in the Chester Zoo. Last year's successful experiment with an incubator was repeated and fifteen young have been reared this year.

\* \* \*

Ronald J. E. Horsham has been mainly responsible for the formation of the Zoological Society of South Africa. It is intended that the new Zoo in Cape Town shall rank with the best in the world.

\* \* \*

G. A. Gjessing, Drammen, Norway, reports the following reared : 6 Stanleys, 3 Rock Pebbles, 6 Black-cheeked, and 2 Peach-faced Lovebirds ; two hen Chinese Painted Quail on eggs, and one with three chicks ten days old.

\* \* \*

Gerald T. Iles, Superintendent of the Belle Vue Zoological Gardens, Manchester, since 1933, has been appointed first Director of the new City of Montreal Zoological Park. The Park will cover an area of 400 acres and \$9,000,000 have been allotted for its development.

\* \* \*

L. J. Prail, Hereford, has bred four All-green Parrakeets (*Brotogeris tirica*). The first breeder in Great Britain was Dr. L. Lovell-Keays who had a nest of four reared in 1914 : and Wesley T. Page bred three in 1918, after several broods were hatched but not reared.

David Reid-Henry held a very successful show of bird paintings at the City of Leicester Museum and Art Gallery, 28th August–29th September, 1957. Amongst the paintings exhibited were the originals of a dozen coloured plates that have been published in the Magazine.

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G. Anderdon, Taunton, has bred a hitherto unrecorded hybrid, Grey Singing Finch × Zebra Finch (white) : also an uncommon cross, Bicheno's Finch × Zebra Finch (fawn). The latter hybrid was bred by R. Ellis, of London, 1888 : and by L. W. Hawkins, West Dulwich, in 1903, one reared, and in 1904, two.

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In 1936 the Edinburgh Zoo received six Night Herons from Canada. They reared several broods in an aviary and in 1950 some of the young birds were released. They did not leave the Park and built nests in the trees surrounding the Sea Lions' Pool. Now about thirty of these birds form a free colony, nesting regularly.

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Allen Silver continues to breed Golden-mantled Rosellas and Stanleys with considerable success—please note, none for sale ! The Rosellas, now somewhat aged, have reared a brood of three (the smallest number any of the three hens used over the years has reared). This now makes 72 young reared in the same aviary and box, since the first pair was obtained from Tom Goodwin many years ago. The Stanleys reared four in 1955, six in 1956, and five this year ; and a 1955 female paired to an adult Australian male has at first attempt reared six.

\*            \*            \*

Breeding reports.—Sqd.-Ldr. C. Everitt, Green Cardinal, three four-day-old chicks washed out of the nest in a rainstorm : Black-crested Finch, one of the two flying young was lost as the result of the storm, three more in the nest now ; Pretty Warbling Finch, two hatched and thriving. Lord Gerard, Black-breasted or Banded Plover (*Zonifer tricolor*), two reared of three hatched. R. C. J. Sawyer, the young Roulroul was fully reared. B. C. Turner, Virginian Cardinal, three eggs, one hatched by a canary died within twenty-four hours ; the other two hatched by parents died after two and four days.

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*Erratum.*—The young Plover reported as hatched at the Wassenaar Zoo (page 141) were not Spur-winged but Black-breasted.

A. A. P.

## REVIEWS

AUDUBON WESTERN BIRD GUIDE. By RICHARD H. POUGH.  
Published by Doubleday and Company, New York, 1957. Price  
4 dollars 95 cents.

This is a companion to Mr. Pough's two previous books—*Audubon Bird Guide* which covers small land birds of Eastern and Central North America from Southern Texas to Central Greenland, and *Audubon Water Bird Guide* which comprises water, game, and large land birds of the same areas. The present volume comprises land, water, and game birds of Western North America, including Alaska, from Mexico to Bering Strait and the Arctic Ocean. Of the 614 species included in the book, 203 are exclusively western, and these are described fully with information concerning nests, habits, and range. For the other 411 the range only is given as they have already been described by the author in his books on eastern birds, and the page references of these are given. There are 340 drawings in colour by Don Eckelberry, some species are shown in flight, for others the comparison of mature and immature birds, plumage at different seasons, or male and female are given. There are also a large number of line drawings by Terry M. Shortt, mostly of birds in flight. The information is clearly and concisely given and the book is a worthy addition to the author's previous bird guides.

P. B-S.

AN INTRODUCTION TO BIRDKEEPING. By D. H. S. RISDON.  
Published by *Cage Birds*, London, 1957. Price 15s. net.

Mr. Risdon's first words in his general introduction are: "This book is for the beginner in birdkeeping. It is not for the more experienced aviculturist." A very good book indeed it is for those who are starting to keep birds, but it also contains much of interest and use to those who are more experienced. For one thing, the author explains clearly the difference between "species" and "variety"—a confusion between the two terms is surprisingly frequently made. The birds which are possessed by those who read Mr. Risdon's book should be happier birds, for all through he stresses the importance of watching them closely and so ensuring their health and well-being. He points out what to look out for and what to do about it, and his book contains many details not to be found in other publications on the subject.

P. B-S.

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## NOTES

## A POSSIBLE EXPLANATION OF FAILURES IN REARING SUPERB SPREOS

I am having trouble with my brood of Superb Spreos and looking through the past records it seems that very often the birds give up feeding the young just before they fledge. This is just what has happened with mine and I am wondering if my findings might be an explanation of the cause of other peoples' trouble.

The females laid in the one nest a total of seven eggs, six of which hatched. All four birds in the aviary fed the young devotedly and paid no attention to my man, even taking mealworms from his fingers and flying directly with them into the nest. They did not seem to resent my examining the nest daily and this daily examination revealed a dead young one when they were about fifteen days old. It was plump and well-fed looking and had I not been post-mortem minded I might have just thought that it had died of chilling, or something, for the old birds had already cut down on the feeding. I opened it and found that its trachea was just about full of gapeworms; I counted over thirty couples. The old birds had now given up feeding altogether and next day I brought the remaining four into the house (one had disappeared). To my mind the parents had given up feeding because the young were too sick to gape for food and not because of any interference on my part, for this had been going on all the time.

Two of the young ones were very sick and gasped continuously. None gaped for food and it was a matter of prizing open the bill and force-feeding all the time. In any case they were too old to gape for a human foster-parent. By the second day one young one refused to swallow the food put into its pharynx and died the next day. One of the others has a broken femur and unfortunately this one seems to be the most likely to survive. One of the others has wilted a bit, but I do hope I can save at least some.

They share a big planted aviary, 80 feet by 30 feet, with a pair of Green Peafowl, and although it has only been in use for one year, it must be pretty well infected. I intend to disinfect it by killing off the earthworms with Mowrah meal and reduce the risk of gapes and of blackhead in the peafowl.

TOM SPENCE.

\* \* \*

## CORRESPONDENCE

## BREEDING BLUE ROBINS—A PLAGUE OF FOXES

The hen of a pair of Blue Robins kept in a cage which had made a nest and laid eggs, refused to tolerate the cock after four days, so I removed him to save his life. The hen then incubated and reared four excellent young, two cocks and two hens, which are now independent; she is rebuilding the nest. In the meantime the cock has been paired to another hen in an aviary and has five more youngsters by her. Unfortunately this second hen still seems to want him to help with the domestic duties and I hesitate to borrow him either to return to hen No. 1 or to a third hen which has also built in a cage and is calling for a cock all day. A fourth hen, also in a cage, and paired to her brother, has eggs, but does not appear to be sitting; maybe she is shy and comes off the nest when I am about.

We have a plague of foxes here this year which have pretty well wiped out domestic poultry in the neighbourhood and are also destroying cats—bless them! Unfortunately they are causing me some anxiety by digging at the foundations of my pigeon lofts and aviaries and must go the way of all flesh. One got itself shut up in the garage, where at the risk of blowing the tyres off the cars, I shot it. One morning when I went out to supply breakfast to the baby Robins (5 a.m.) I met a young dog fox ambling down the front path. When he saw me, he merely turned aside and strolled down another path, which has taught me never to go out in the morning without a gun. As we are in a very much "built-up" area, I suppose the lack of rabbits is driving the foxes into the vicinity of human habitation, in search of other forms of food.

K. A. NORRIS.

ELMSTONE,  
HIGHFIELD ROAD,  
PURLEY, SURREY.

## THE AVICULTURAL SOCIETY'S WATERFOWL RINGS

Members sometimes ask to be told the size of the Society's rings required for "the various" ducks and geese, and while the table published from time to time in the Magazine is a good general guide, it is clearly impracticable to include all the species in it—even if anyone is able and willing to measure a number of tarsi of each of "the various" waterfowl.

Keepers of waterfowl should judge for themselves the requisite sizes, and a simple rule is that the ring must move freely up and down the tarsus, but must not be so large as to slip easily off the foot. It should not, of course, fit tightly.

A number of Mallard rings are received from time to time, but I cannot understand why anyone should want to put the Avicultural Society's rings on these or on any other common native species. The scheme is surely intended for members and others wishing to keep foreign or the rarer native waterfowl full-winged so that if, for an unlikely instance, a stray Barrow's Golden-eye is found and it is wearing one of the Society's rings, it will be proved not to be a new bird for the British List, and ornithologists will be spared a certain amount of doubt, not to say grief.

J. J. YEALLAND.

ZOOLOGICAL SOCIETY OF LONDON,  
REGENT'S PARK,  
LONDON, N.W. 1.

## ESCAPED BIRDS

I am writing a book on introduced animals and birds in the British Isles, and should be very grateful for any information about full-winged waterfowl allowed their freedom at present. I am particularly interested in birds that have started to breed away from their home estates, but information about any well established free-living waterfowl, except for Canada Geese, Egyptian Geese at Holkham, and Mandarin Ducks at Virginia Water, would be welcome.

I should also be grateful for information about free-living birds other than waterfowl which have started to nest away from their home estates.

R. S. R. FITTER.

DRIFTS,  
CHINNOR HILL,  
OXFORD.

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- S. H. WOODS, 37 Tytherton Road, Tufnell Park, London, N. 19. Proposed by A. A. Prestwich.

## NEW MEMBERS

The twelve Candidates for Election in the July-August, 1957, number of the AVICULTURAL MAGAZINE were duly elected members of the Society.

## CHANGES OF ADDRESS

P. C. BATH, to Park Farm, Roxton, Beds.  
 WILLIAM G. CONWAY, to New York Zoological Society, Bronx Park, New York 60, N.Y., U.S.A.  
 A. V. GRIFFITHS, to Dol-llan, Llandyssul, Cards.  
 G. H. NEWMARK, F.Z.S., to 20 Chalfont Court, Baker Street, London, N.W. 1.  
 J. J. STROLLO, to Box 6344, Honolulu 18, Hawaii.  
 J. W. TWELL, to 82 Berkeley Avenue, Chesham, Bucks.  
 MRS. GRACE WHEATLEY, to 57 Cadogan Place, London, S.W. 1.  
 D. P. WYATT, to 168 Parkway, Welwyn Garden City, Herts.

## MEMBERS' ADVERTISEMENTS

*The charge for Members' advertisements is ONE PENNY PER WORD. Payment must accompany the advertisement, which must be sent on or before the 15th of the month to A. A. PRESTWICH, 61 CHASE ROAD, OAKWOOD, N. 14. All members of the Society are entitled to use this column, but the Council reserves the right to refuse any advertisements they consider unsuitable.*

### WANTED

(1) Pair Wood Duck (*Aix sponsa*), (2) various small varieties of Quail, other than Chinese Painted.—Major J. M. SERJEANTSON, Yed Hill, Ringwood, Hants.

### FOR SALE

*Handbook of British Birds*, Witherby, 5 vols. (as new) ; *Amateur's Aviary of Foreign Birds*, W. T. Greene, 1883 ; *Rose Annual* (1950-1957), 8 vols. ; AVICULTURAL MAGAZINE, vols. 54-62.—Offers to H. J. RABBIN, 33 Kingsway, Wembley.

1957 hand-reared waterfowl : Carolina, Tufted, Red-crested Pochard, Wigeon, Chiloe Wigeon.—C. D. WESTON, Bradgate House, Grosby, Leicestershire.

## WATERFOWL RINGS

Members are reminded that the Society's special blue rings are always available. All Waterfowl in collections, both public and private, should carry them.

### *Revised prices*

<i>Size.</i>		<i>Price per dozen, post free.</i>	
		<i>s.</i>	<i>d.</i>
2-3	Teal . . . . .	4	0
3	Wigeon . . . . .	4	9
4	Mallard, Pintail, etc. . . . .	5	6
4-5	Smaller geese . . . . .	6	3
5	Greylag . . . . .	7	0

Requests for rings should be addressed to the Hon. Secretary, Avicultural Society, c/o Zoological Society of London, Regent's Park, London, N.W. 1, from whom all particulars can be obtained.

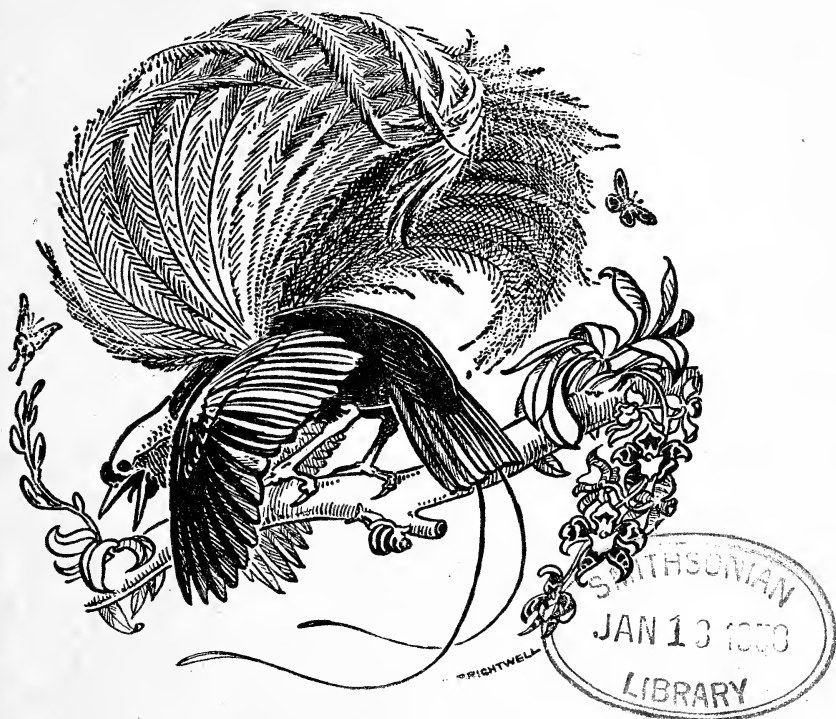


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# AVICULTURAL MAGAZINE



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# THE AVICULTURAL SOCIETY

Founded 1894

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**Hon. Secretary and Treasurer : A. A. Prestwich, 61 Chase Road,  
Oakwood, London, N. 14.**

**Assistant Secretary : Miss Kay Bonner.**

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The annual dues of the Society are \$2.50 per year, payable in advance. The Society year begins 1st January, but new members may be admitted at any time. Members receive a monthly bulletin. Correspondence regarding membership, etc., should be directed to the Secretary.

## THE AVICULTURAL MAGAZINE

The Magazine is published bi-monthly, and sent free to all members of the Avicultural Society. Members joining at any time during the year are entitled to the back numbers for the current year on the payment of subscription. All matter for publication in the Magazine should be addressed to :—

**The Editor : Miss Phyllis Barclay-Smith, 51 Warwick Avenue, London,  
W. 9. Telephone : Cunningham 3006.**

The price of the Magazine to non-members is 5s., post free, per copy, or £1 10s. for the year. Orders for the Magazine, extra copies and back numbers (from 1917) should be sent to the publishers, Stephen Austin & Sons, Ltd., Caxton Hill, Ware Road, Hertford, England. Telephone : Hertford 2352/3/4.





DUFRESNE'S WAXBILLS.

# AVICULTURAL MAGAZINE

THE JOURNAL OF THE AVICULTURAL SOCIETY  
AND THE AVICULTURAL SOCIETY OF AMERICA

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## DUFRESNE'S WAXBILL

(*Coccothraustes melanotis melanotis*)

By J. J. YEALLAND (London, England)

Dufresne's Waxbill, also known as the Yellow-bellied Waxbill and, in South Africa, as the Sweet Waxbill was first described in 1817 by Vieillot who named it *Fringilla dufresni*, but the description was considered by Sclater to be inapplicable because of being so faulty, and Temminck (*Pl. Col.*, livr. xxxvi, 1833, pl. 221, fig. 1) is now the accepted author.

This Waxbill inhabits south-eastern Africa, being said by Stark to be migratory in part of its range, but resident in Natal and the Transvaal.

Sclater recognized five races, the Angola Yellow-bellied Waxbill (*C. m. bocagei*), the Kenya (*C. m. kilimensis*), the Uganda (*C. m. nyanzae*), and the Abyssinian (*C. m. quartina*) being the others.

Stark says, "In Natal this pretty little species is, when not breeding, usually met with in small parties of ten or twelve, feeding on the ground on grass-seeds. . . . This Waxbill breeds in Natal not uncommonly, but not, so far as I have observed, near the coast. Not far from Howick, at a height of about 3,000 feet, I have met with their nests in some numbers. Unlike many of the Waxbills, they build in tall bushes and young trees, at a height of from six to ten feet. The nests are rough-looking, oval structures, with an entrance hole on one side, constructed of fine dry grass. The flowering ends of the grass being woven together, the stiff stalks are left projecting in all directions. The interior is lined with grass tops, down, and feathers. The eggs are very small, pure white in colour, and four or five in number. When first hatched the young are fed on small caterpillars."

Dufresne's Waxbill was first bred in the British Isles by Miss Elsie Robinson, who wrote a good account of the occurrence for the *Avicultural Magazine* (1934, p. 249) and was awarded the Society's medal. Mr. H. S. Sewell bred it in Adelaide during the following

year (*A.M.* 1935, p. 182). The most recent published success (*A.M.* 1949, p. 9) was Mr. Dulanty's at Chorley Wood, Hertfordshire, when two broods were reared.

These articles contain valuable information on the care and breeding of this charming Waxbill.

\* \* \*

## BREEDING SUCCESSES AND FAILURES IN LOURENÇO MARQUES

By E. H. HAWKE (Lourenço Marques, Portuguese East Africa)

Although I appreciate all too well how boring accounts of breeding this and that can become, it does occur to me that some of the successes (and failures) in this part of the world, where, I think I am right in saying I am the only member, and which is probably not well known to many of your readers, might be of interest.

Lourenço Marques, the capital of Portuguese East Africa, is situated on the mainland some 250 miles (as the crow flies) north of Durban. It enjoys one of the finest climates of the world during four months of the year (May–August); is very pleasant during another four (March–April and September–October), but from November–February, it is not to be recommended. Our rains fall during the summer months except for odd showers and when it rains, it rains. Aviary drainage and shelters therefore need careful watching, otherwise there is a risk of finding oneself with accommodation more suited to fish than birds.

In all I have at the moment twenty-four aviaries, with another five about to be constructed. Four of these are planted, the largest measuring 15 feet by 45 feet by 18 feet. The rest, including those to be constructed, are in the main, breeding cages. They vary slightly in dimensions and shape, but roughly are in units measuring 4 feet by 8 feet by 12 feet, which can be combined if required to form larger areas.

From both the ornithologists' and aviculturists' point of view, Portuguese East Africa is an area which delights both the heart and the eye. Still, in many districts, comparatively unspoiled by the advent of man, there are some 900 different species of birds ranging from the lordly Ostrich down to the tiniest of the warblers, in greater or lesser profusion, and no matter where you may roam, it will be a rare exception if no bird is in view.

One would think that with such a wealth of bird life close at hand, no one in their sane senses would look beyond our boundaries for aviary stock, but what aviculturist is sane? Naturally my collection, which now comprises some 100 species and 500 birds, is made up mainly of locally procured stock, but I am always ready to accept

strangers, and I have a few representatives from Australia, India, and South America amongst my birds.

The largest of my planted aviaries houses hornbills (*Lophoceros nasutus epirhinus*), rollers (*Coracias garrulus*, *Coraciura caudata*, *Eucoracias mosambicus*), weavers, starlings, bulbuls, doves, barbets and thrushes and the smallest, a wide variety including most of our waxbills and Sunbirds. It is, of course, difficult to keep such mixed families on good terms with each other, and every now and then a dispute ends in tragedy but, by and large, they seem to get along reasonably well. Of course, I do keep the worst offenders to themselves, but it is quite astonishing—at least to me—how frequently one can find a real “bad-egg” amongst what normally is considered a peaceful species.

As I write, a new breeding season is upon us and there is activity in all directions. As usual, I am hoping for miracles but will, of course, be satisfied with whatever the fates permit. I hold crossed fingers for my African Greys, down on eggs for the fifth or sixth time, but who have never yet “delivered the goods”. I have hopes that my Lilac-breasted Rollers and Sunbirds will this season do something more than play at raising a family—a pastime which they apparently enjoy. I always feel that it is a poor reward for days spent rushing around the neighbourhood collecting cobwebs—arousing in the process the gravest suspicions amongst individuals who, at the best of times, are apt to look upon the aviculturist as not quite “all there”—and watching a beautiful nest grow before one’s eyes, to find the couple suddenly lose interest. Incidentally, I have in my aviaries Scarlet-breasted, Amethyst, Marico, Purple-banded, Neergaard’s, White-breasted, Collared, Grey, and Olive Sunbirds, and such attempts at nest construction that I have witnessed, both in the aviaries and out, have been the work of the female only. The male appears to spend most of his time urging his wife to greater and greater efforts, though he is never averse to passing the time of day with any other member of the opposite sex who might pass his way.

Just in case it might be of interest to fellow aviculturists, I list the species which have bred successfully in my aviaries, i.e. the young have perched and grown to maturity. Ruddy, Common, Orange-breasted, Blue-breasted and Jameson’s Waxbills, Hooded Finches, Red-backed Mannikins, Streaky-headed Seed-eaters, Melba Finches, Golden-breasted Buntings, Cut-throat Finches, Magpie-Robins (*Copsychus saularis*), Red-vented Bulbuls (*Molpastes cafer*), Crested Barbets, Ring-necked and Laughing Doves, Speckled-backed and Golden Weavers, Speckled Colies, Peach-faced and Nyasa Lovebirds, Indian Ring-necks, Eastern Rosellas, Cockatiels, Brown-headed Parrots (*Poicephalus cryptoxanthus*) and Blue-fronted Parrots.

There are innumerable others which have tried, some getting no further than building a nest, others laying, and others even producing

young which for some reason or another have not made the grade. I am one of that group which does not believe in disturbing any bird that is about its business of raising a family, so I cannot provide much information regarding the number of eggs laid, incubation periods, etc. Food is of the widest possible variety ; all kinds of seed, fruit, bread soaked in milk, minced meat, insectivorous foods, live food (grasshoppers, mealworms, gentles, white ants), greenfood, so there is something for all tastes, and it is surprising what some of them will eat. To me a Sunbird with a juicy piece of minced meat was something unexpected. Those which share the Sunbird aviary also enjoy the nectar mixture and fruit flies, and the bird that does not take some nectar certainly is the exception.

I do a certain amount of trapping myself but, having a business to attend to, the opportunities are few and far between. The natives, however, bring in specimens from time to time, and it is really on them that I rely for replenishing and adding to my collection. Fate also lends a hand, as one may judge from the following two incidents which may prove of interest.

I had been trying for some time to secure a Black-collared Barbet, but could never find a native collector with sufficient intelligence to find one of the hollow logs in which these Barbets normally roost. One day, however, I was doing some writing in my study when our cook-boy approached with a bird clutched in his hand—a Collared Barbet, of course ! As he had been walking through our back yard, the bird had fallen at his feet, having apparently stunned itself by striking an overhead telephone wire. This in the middle of a fairly large town.

The second incident concerns a Narina Trogon (*Apaloderma narina*). I was telephoned one afternoon by my wife who, though she bears with my affliction, is not too well versed in bird identification, to say a Coucal was flying around our garden and the gardener thought he could catch it—should she permit the attempt. Not wishing to damp her enthusiasm, I agreed, and when I returned home about 5 p.m. I facetiously demanded to see the bird, only to be told that it had disappeared. My wife, however, insisted on my going out to see exactly where the Coucal had been spotted and lo, there was no Coucal, but a Narina Trogon. All forces were summoned, but the bird made off and I said good-bye to my hopes of owning one of those beautiful jewels.

Next day I was busy in my office situated in the centre of a very busy port area, when a friend walked in with a bird in his hand—yes, the Trogon. He had been walking along the street to see me on business when this bird flew into his stomach and stunned itself. Admittedly the target was of no mean size, but what luck. Both birds lived in my aviaries for a number of years.



## REARING THE YELLOW-CHEEKED AMAZON

*(Amazona autumnalis autumnalis)*

By E. N. T. VANE (Great Missenden, England)

The Yellow- or Primrose-cheeked Amazon is found fairly well distributed in south-east Mexico and the northern areas of Central America, but only occasionally are odd specimens available in this country. According to Peters' *Check List* it is only regarded as a sub-species to Salvin's, Lesson's or Lilacine and the Diademed Amazons, but it is without doubt by far the most handsome of the four.

The body colour is a bright green, lighter on the under parts. The frontal band is a bright cerise, the crown a delicate pale lilac blue, the edge of each feather being darker. This colour merges into the green of the nape and mantle and again these feathers are emarginated with a blackish shade. The cheeks are chrome-yellow extending from the bill below the eye to the ear-coverts, this area being flecked with cerise in some cases. On the bend of the wing is a patch of pale yellowish-green. The primaries are bluish and there is an orange-red speculum. The tail is green, lighter on the underside and yellowish towards the tip. The bill is yellowish horn with blackish areas on the upper mandible. The eye is brilliant gold which can vary considerably, sometimes when excited the pupil becomes very small and the iris literally blazes, at other times the colour appears to separate into two rings of red and yellow. The eye is surrounded by a narrow, white skin orbital area, and in some birds the eyes appear to have distinct lashes. The feet are grey, with black claws. The sexes are alike, though cocks are larger in the head and bill. Immature birds resemble the parents in all details, except that the eye is dark brown and the bill darker towards the point of the upper mandible. Some specimens have traces of yellow on the throat. Length is about 14 to 15 inches.

The pair of birds in my possession started laying when they were about three years old. They have twice succeeded in hatching young previously, and have had young dead in shell every other season; the eggs have always been fertile. The cock is most aggressive in the breeding season, indeed he is always seeking the opportunity to attack someone or something and frequently vents his spite on his poor hen, who is a charmingly friendly bird by comparison. His favourite amusement is to knock her off the perch and watch her climb back. She accepts this as normal good manners, and always takes her time to come back within his reach. She regards any outside interference in this procedure as unwarranted between husband and wife, and is always ready to join him in a cursing match. This trait is probably the cause of their repeated failures to rear their young, as

every year just as the hen should be incubating, it is time for the adjoining land to be ploughed or sown, and this is the signal for the cock to start his nonsense. They are both good talkers, and have taught several of the other birds to talk as well. It is always amusing to hear the cock encouraging the hen in the depths of the nest box, and to hear her muffled replies coming back. But every time he starts swearing at the farm hands over the hedge, or any other intruder such as a cat, fox, or other visitor, the hen immediately joins him and comes off her eggs. Unfortunately, this amuses visitors, who are of course, entirely unauthorized, and they linger and talk to the parrots and are frequently indignant when asked to clear off.

Last year our Grey Parrot laid two clutches of eggs on the floor of her cage—one of the usual 18-inch square type—and incubated them assiduously. Naturally these were abortive as she had no mate, but we decided to take advantage of her exemplary behaviour provided she laid at the same time as the Amazons. "Polly" would not tolerate any form of nesting material for her eggs; wooden nest-pans and shallow boxes of peat, sand, and rotten chips were tried, but she laboriously removed the lot or pushed them aside. Again she laid this Spring, rather earlier than usual, but it coincided with the Amazons nesting in their flight (which is only about 18 feet long with a nest-box outside; they seem to prefer to climb though both are excellent fliers when so inclined), so we put our intention to exchange the eggs into operation; there was little to lose, anyhow, as sure enough they started to plough the field three days after incubation should have started.

Collecting the Grey's eggs was a simple matter, she never minds anything I do to her, and when the eggs were removed she just got up on the perch and had a good feed. She really was not perturbed, and seemed to be quite confident that I would return the eggs unharmed in due course. Getting the Amazon's eggs was quite another matter altogether. The box was outside the flight, covered externally with an asbestos sheet in case the birds whittled their way right through, a task well within their powers, as they strip a three-inch perch in a day and soon finish it altogether; but strangely enough they have had this same nest-box for seven seasons and have scarcely damaged it beyond enlarging the entrance hole. After several attempts to manœuvre the birds away from their box, we finally succeeded in stuffing a sack in the hole from the top of the box and removed the eggs with a long-handled ladle, replacing them with the infertile Grey's eggs. There were only two Amazon eggs, their usual clutch being three. These were duly given to "Polly" on the thickly sanded floor of her cage in the living room on 27th May, when she promptly started incubating closely. Meanwhile the Amazons carried on as in previous years. The hen duly retired to the box, but the cock was

so aggressive and demonstrative that she was constantly coming off to see what all the bother was about. On 16th June, she was off for quite a lengthy period, and after the usual ceremony of the cock knocking her off the perch, I decided to have another look. She had laid a third egg which was again removed. I had taken the precaution of marking the eggs, which were almost identical in size and appearance. The Grey's were possibly a little more rounded, but it would have been most difficult to distinguish them with any degree of certainty. This occurred during a very hot spell of weather when the Amazon was sitting very lightly, in fact almost appeared to desert for a few days, although she brooded every night. It is possible that these birds, coming from a very hot climate, might well rely on the heat of their surroundings to keep their nest warm for quite lengthy periods during daylight hours, and this may account for their unsatisfactory results in this country in other years.

"Polly" sat very closely in the corner of the room we used daily. She was perfectly friendly and normal, and used to come off and feed regularly every morning when her bowls of food and water were renewed. She still liked to have her poll scratched, and once this was done, she immediately settled down to her task once more, and was left undisturbed for the rest of the day. This was exactly as she behaved on other occasions.

Mr. Arthur Lamb has recorded that when he bred an Amazon the incubation period was twenty-one days, so we calculated that these eggs were due to hatch any time after 19th June. About this time "Polly" started to soak her breast and thigh feathers each morning, and since she did not resent my help, the eggs were floated in a bowl of warm water for a few minutes. One sank and the other two floated. I have not found this a reliable method of determining whether the egg will hatch or not, but mention the fact for what it is worth. The Grey immediately returned to her eggs when they were replaced. On the 22nd the eggs were again submitted to this treatment, and on this occasion there was a most definite movement in one of the floating eggs and I could hear a definite tap from the interior. On Sunday the 23rd, one egg had a clearly visible chip, and I could hear the young bird squeaking inside the shell. Shortly before midday, whilst I was out, the first little Yellow-cheek broke through. It was assisted by the foster-mother who very carefully cut the top out in a small circle, so that the young one wriggled through a hole leaving the shell in two clean pieces. Of the other two eggs, one was clear and one addled in the early stages. It is therefore assumed that the latter was the egg removed on 16th June, which had been spoilt by the unreliable sitting habit of the Amazon hen, and that the fertile egg was removed on 29th May, together with the infertile one. So the incubation period was twenty-five to twenty-six days.



STAGE I. FIRST FEED.—The young bird is lifted bodily by the head. The point of the bill is forced between the young bird's mandibles at the back, and liquid is regurgitated and trickled down the tongue from the other side into the mouth.



STAGE II. SECOND FEED.—Parent takes tip of young's bill and starts jerking head with pumping action.

The African Grey was entirely calm and unperturbed with her accomplishment, she behaved like an experienced mother, never in the least worried but obviously very pleased with the result of her patience. She brooded the chick very closely, making no attempt to feed it for the first twenty-four hours, although she repeatedly cleaned it. She moved it about by lifting it bodily by the head. She was supplied with the usual seeds, bread and milk with Abidec added, also soaked brown bread, with sprouted seeds and greenfood, which she enjoyed and consumed in increasing quantity as the youngster progressed.

We now had a unique opportunity to observe exactly how a parrot sets about rearing its young, as the whole of the operation was carried out oblivious to our close interest and observation. The parent bird was completely absorbed in her task, and did not resent our presence in the least. The first feed was given on the second day. The young bird was first lifted bodily by the head, and the point of the parent's upper mandible was then gently inserted into the small gap of the youngster's mandibles right at the rear as shown in sketch 1. She then trickled liquid down her tongue into the opposite side of the baby's mandibles. Once the young bird started feeding thus, this procedure was no longer necessary and as soon as the mother clucked, the young one instinctively raised its head and gaped ready to accept its food. Taking the tips of the mandibles in her beak the mother then applied the usual pumping action of regurgitation and one could actually watch the young one's crop fill out (see sketch 2). At this stage feeding was carried out with unfailing punctuality every two hours. The consistency of the crop milk was about the same as that of ordinary milk. For practically the whole of the first two weeks the Grey brooded continuously, but thereafter left the nest for a while for longer and longer periods. Feeding intervals were slowly increased to three hours, until six weeks had passed, when the meals were increased in frequency, but decreased in bulk. During this time, too, the consistency of the food was also thickened. By this time the young bird was becoming very intelligent and knew full well that every time mother had something to eat, it would get a taste, and it was not backward in asking for its share.

At about ten days, the eyes began to open and quills began to appear. At this stage we were a little apprehensive that the difference in colour might upset the mother. We need not have concerned ourselves, however, as "Polly" was a most attentive and competent parent. The floor of the cage became littered with seed husks, but no attempt was made to clean it out for the first month in case she resented it. I was in fact away at the time, and no one else dared put a hand inside the cage, this applied whether she had a youngster or not. At a month old, the squab resembled nothing more than a dirty

looking pin-cushion, and was extremely awkward-looking and ugly, but "Polly" thought it was the loveliest thing that ever happened, and she spent hours cleaning it.

The young one grew rapidly, and as the feathers opened out the young bird was deliberately taught to preen itself and was always in spotless condition. The plumage was complete at seven weeks, exactly similar to the adult bird's, except that the flight and tail feathers were not fully developed. The young bird was just over eight weeks old when it first succeeded in climbing on to the central perch—an age at which it would normally have reached the stage of peeping out of the nest hole. Its bill was blackish on the upper mandible, yellowish at the edges and towards the point. The eye was dark and the feet grey. On its breast it has a few yellowish feathers. The fact that its plumage is similar to the adult was interesting, as according to some accounts, many Amazons are reputed to be all green when immature and to assume full colour when a year or more has passed.

\*            \*            \*

## DARENTH-HULME, 1957

By KAY BONNER (Southgate, England)

Year after year numerous members inform us either that they have had a good breeding season or that they are satisfied with their results. I am afraid we are never completely satisfied—but we are ourselves mainly to blame that our results fail to come up to our expectations, because we keep far too many birds. We seem to have a faculty for accumulating them!

During the winter all the pheasant pens and pigeon flights were entirely rebuilt, the passage at the back of the main aviaries was reconstructed and divided into six compartments, and a Caique house with flight was built. It now only remains to overhaul completely the main aviaries, but that is a project we do not view with equanimity.

Last winter was, of course, comparatively mild, and our losses directly attributable to the cold were remarkably few. We did, however, lose our Egyptian Plovers, a Natal Robin, a Black-headed Sibia, and a Golden-breasted Bunting—all these in the wilderness aviary.

The occupants of the main range of parrakeet aviaries are Green-winged Kings, Crimson-wings, Queen Alexandra's, Pennant's, Bauer's, Cockatiels, Tavis, All-Green, Golden-winged, Lineolated; Patagonian, Weddell's, Cactus, Black-headed and Yellow-checked Conures; Noble Macaws; Fischer's, Masked, Peach-faced and Abyssinian Lovebirds; and Lesser Hill Mynahs and Chinese Collared Laughing Thrushes.

Few of the parrakeets made any great success of such attempts as they made to breed. The Pennants produced their usual brood, but whereas in the previous four years the young have left the nest in full, adult plumage, the four young this year were somewhat undersized, mottled dark green and red. All the Lovebirds increased their kind, but none of our pairs may be described as prolific. The Noble Macaws laid three eggs, but scattered them at an early stage of incubation. The colony of Lineolated Parrakeets just holds its own, a brood of three late in September making up for earlier losses.

The Red-faced Lovebird colony, numbering thirty-four, is a continual source of interest. Last year's success when one young one was reared has not been repeated, but it is not yet too late.

A few new birds have been added to the wilderness aviary: Hildebrandt's Starlings, Chinese Hawfinches, Pekin Robins, and Red-collared and Yellow-backed Whydahs. Here the Common Mynahs reared broods of two and one; the former very rickety, the latter a perfect bird. Purple-headed Glossy Starlings had several broods, but only succeeded in rearing one young one which was later scalped. Many Zebra and other small finches leave the nests, but the majority quite unaccountably disappear—presumably falling victims to some, as yet, undetected predator.

The numerous pheasants, quails, bantams, pigeons and doves, both domestic and foreign, continue to thrive and, in the main, increase.

Our one real success, the breeding of the Green Imperial Fruit Pigeon, made up for any disappointments. The young one hatched on 1st September (see page 148) left the nest on the 22nd, and is as fine a bird as the first reared. We now have fourteen of these somewhat voracious pigeons, seven Green Imperial, and seven Pied Imperial. The latter laid fourteen or fifteen eggs, but failed to hatch any.

The most important recent arrivals are four Black Bronze-winged or White-capped Ground Pigeons (*Henicophaps albifrons schlegeli*) brought from the Aru Islands by W. J. C. Frost. At present they are very travel-stained, but eventually they should prove to be very handsome birds.

The bird-rooms at present house seven White-bellied and four Black-headed Caiques, five Senegal Parrots, one Mayer's Parrot, one White-winged and three Canary-winged Parrakeets, three Black-cheeked Lovebirds, and one Greater Hill Mynah. Amongst our house parrots we suffered the loss of our favourite Grey "Cocotte", a venerable and very talented "lady" well known to many members of the Society.

## A NEW MUTATION OF THE GOLDEN PHEASANT

*(Chrysolophus pictus luteus)*

By ALESSANDRO GHIGI (Bologna, Italy)

*Adult Male.*—Crest golden yellow slightly lighter than in the typical form ; rest of face, chin, throat and sides of neck, light yellow ; cape orange with the two steel blue bars as in the Golden Pheasant ; mantle dark green, with the lower portion of each feather yellowish ; lower back and rump golden citron yellow ; central tail feathers pale brown dotted with light yellowish ; other tail feathers irregularly barred with pale brown and yellowish ; upper tail coverts same colour as central tail feathers in the lower web, with the upper web yellow ; scapulars yellowish tipped with brown ; tertiaries and their coverts dark brown ; secondaries and their coverts barred with more or less dark brown ; primaries light straw yellow ; all body feathers yellow, lighter in the middle of abdomen and on the lower thigh ; tail-coverts yellow. Iris, wattles, and bare skin around orbits yellow ; beak and legs yellow horn.

In substance, the more remarkable differences between this mutant and the typical form are the total substitution of a yellow colour for the scarlet, a dark brown for the blue of the wings, a citron yellow for the rich yellow of the back, a pale brown for the black of the tail and wing-feathers, and the straw yellow primaries. Crest and cape are the same as is the visible portion of the green mantle.

*Young male.*—General surface colour straw-yellow, very slightly barred with pale brown in all sections. On the sides of head yellow orange shades are noted. Wing and tail feathers have the same pattern as the typical form, but are extremely light-coloured with alternative bars or lines of brown and straw yellow.

*Adult female.*—Same pattern as in the typical form, but the general surface colour instead of being buff barred and mottled, more or less plentifully with black, appears straw yellow, barred and mottled with brown, more or less pale according to the specimens and to the sections of the body considered. Primaries and secondaries, pale brown barred crosswise with straw yellow.

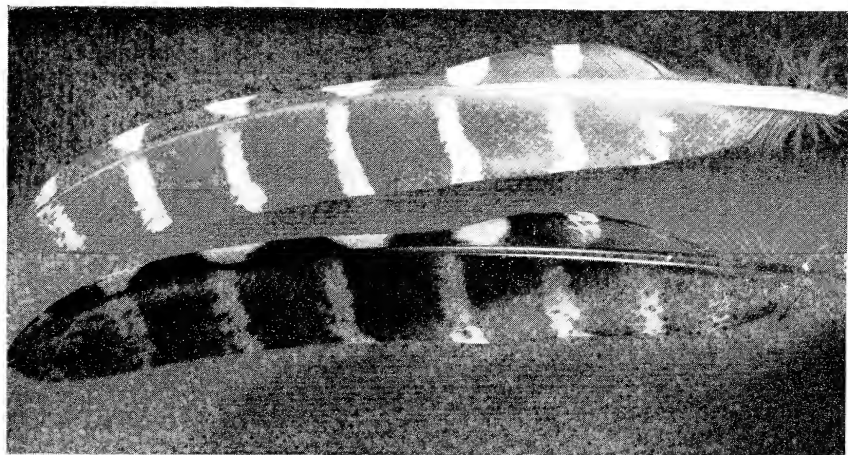
*Chick.*—Creamy white at birth ; as soon as the epitrichium of the filoplumes has split the mottling appears the same as in the normal chick, but in much lighter shades.

*Origin.*—The mutant male, first of the race, was brought to me, already adult, by Mr. Alexander Hampe from Coburg, in 1952. Having had an inkling of the matter through an advertisement issued in an avicultural journal, he thought I would be interested, and brought it to me. I was not able to obtain information about the place of origin, but it seems to have been in Bavaria.





ADULT COCK MUTANT GOLDEN PHEASANT



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[A. Ghigi

PRIMARY WING-FEATHERS—(above) MUTANT FEMALE, (below) NORMAL FEMALE.



*Breeding.*—In the spring, 1953, a young normal golden female mated with the mutant did not lay eggs ; in 1954 an offspring of the usual colour resulted, whence it was shown that the mutant sire was recessive. Two heterozygous females of this generation were mated with their sire ; I entrusted Professor Taibel, Director of the Experimental Poultry Station of Rovigo, with one heterozygous male and two heterozygous females.

In 1955 my heterozygous hens produced normal heterozygotes and recessive mutant homozygotes in the same proportions ; Professor Taibel obtained in Rovigo 75 per cent normal dominants and 25 per cent homozygous recessives.

In the spring of the following year, 1956, it was confirmed that the mutants are homozygous, as both my young mutant specimens and those from Rovigo (Taibel) exclusively produced mutants.

My breeding was not very successful in 1956. The old cock, maybe because of the terrible cold suffered during the winter, did not fertilize the eggs of the first brood, but all the eggs laid by the hens mated with the young male were fertilized. Furthermore, various accidents caused the death of some chicks during the rearing season. Anyway, excluding the first of the race, we now possess two adult males and three adult females, three year-old males and six year-old females. Altogether we have, the first of the race excepted, five adult males and nine adult females. I have sent one adult male and two young females to the Zoological Garden of Rome ; furthermore, last spring, I shipped a pen formed by one male and two females, all heterozygous of the usual colour, to the Zoological Garden of Copenhagen, from where I have not yet had news concerning an eventual mutant offspring.

Some further observations may be added :

(1) The adult male, that lives now in the Zoological Garden of Rome is not perfectly similar to the sire ; some feathers of the throat show a brown edging, so that the bird appears to have a small collar in the throat.

(2) The plumage colour is not of the same richness in all the female specimens ; some have darker bars compared with others. One must consider that the first mutant cock, arising from normal forms, may carry some multiple factor, to which a further variability is due.

The above facts will be the subject of careful control in the next, 1957, breeding season.

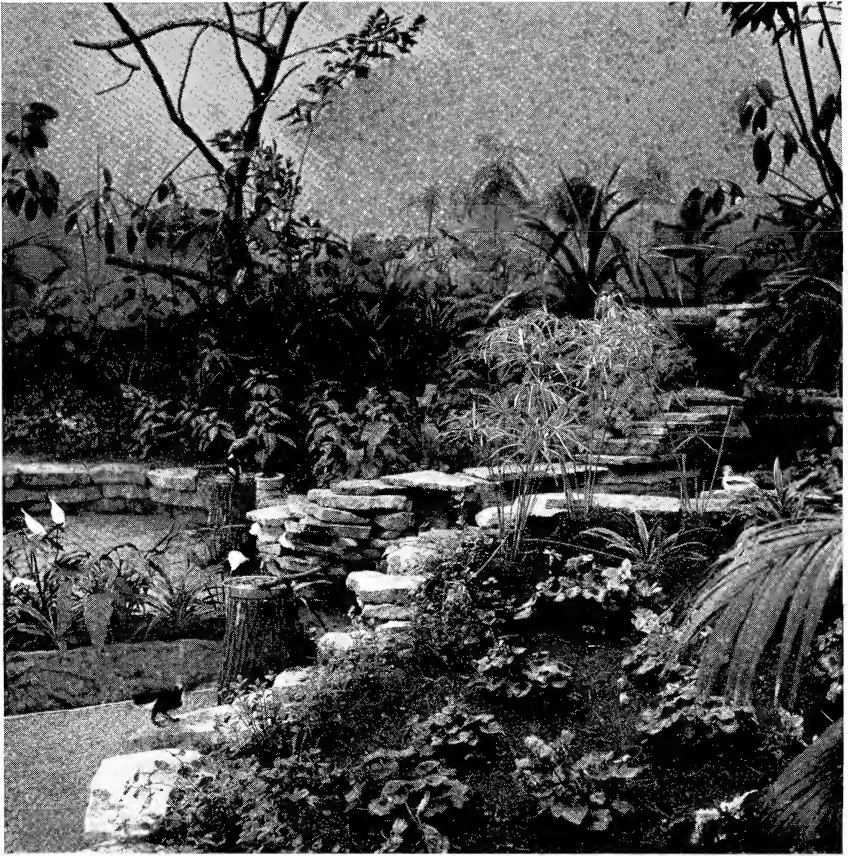
*Note.*—In this breeding season (1957) I have reared about fifty mutant chicks.

## NEWS FROM THE BROOKFIELD ZOO

By KARL PLATH, Curator of Birds (Brookfield, Ill., U.S.A.)

“What’s new at Brookfield this year?” This question can be heard every year, for each year a new attraction is added for the benefit of the public. Last year an Okapi, before that the Otter Grotto, modernistic but attractive, before that the enormously popular Children’s Zoo, a flock of the delightful, tiny Fairy Penguins (about 10 inches high), a generous gift from one of our benefactors, Sir Edward Hallstrom, of Sydney, Australia, then from the Ueno Zoo in Tokyo came Emperor and Adelie Penguins. So now we have the extremes in size of these fascinating birds, for the lovable little Fairy Penguins scarcely weigh 2 pounds, while the largest of our three Emperors (about 4 feet high) weighed 80 pounds on arrival, and feels like a sack of sand when one bumps against it. Comparing the Emperor with the smaller King Penguin shows that the former has much more bulk, while the slimmer King which is about 10 inches shorter weighs on an average of 35 pounds. The Emperors, Kings, Adelies, and Humboldts occupy a large, glass-fronted cage about 30 feet across and 10 feet deep, with a glass-fronted pool almost as large, where they disport themselves with abandon. This enclosure is kept at a temperature between 50° and 60°, usually 54° (fahrenheit), with germicidal lamps for germ-proof atmosphere and filters for pure air. The Fairy Penguins are kept in winter in one of the wall-cages (about 15 feet long), and in summer are active in one of the larger pools.

But this article is to tell members of our latest remodelling—that of the Perching Bird House which attracted considerable attention about ten years ago in the making of a series of “picture-cages”, twenty of them along the east and west wings of the building. These are metal-framed, glass-fronted cages and are used for individual specimens best kept apart, such as the toucans, hornbills, several birds of paradise (also gifts from Sir Edward), and others. Now the effect is a long gallery of animated pictures, the subjects living birds behind their glass fronts. The lights are in the cages, and the passage dark. A large double door is at each end, but the main entrance is at the centre of this long gallery. When the visitor enters here he sees at first, or is aware of, large glass cages on each side of the door with numerous colourful small birds but he is mainly attracted to the huge “Freedom Room” which confronts him. This has no wire, no glass, and a portion of the picture gallery floor of beautiful terrazza extends into this open aviary. This has a railing to prevent the visitor from stepping down into it. In former years this large room had thirty-three wire-fronted cages all around it and a medium sized flying-cage in the centre. The alteration was started early in 1956, and opened to the public



*Copyright]*

*[Ralph Graham*

THE EAST END OF THE "FREEDOM ROOM" IN THE PERCHING BIRD  
HOUSE AT THE BROOKFIELD ZOO.



on Christmas Day, 1956. The construction is of stainless steel and plate-glass, and the effect is very elegant.

This main room has been transformed into a garden of exotic plants and flowers. There are three trees with bare branches for perching and a tall hollow tree in one corner partly hidden by a large date palm. There is more than one ground level—a little pool in a corner at the top trickles into a larger one below it, and that again flows into a large pool which overflows by means of a gurgling waterfall into the largest pool immediately in the foreground beneath the rail. Umbrella plants, banana plants, anthuriums, various aquatic plants, and many kinds of flowering plants border these pools and add to the tropical effect.

To keep the interest below there are several striking aquatic birds—Scarlet Ibis, Jacanas, Stilts, Crocodile Birds, a pair each of Mandarin Ducks, Formosan Teal, and several others. These birds are content to stay in the water or on the ground, with the exception of a tame and fearless Sun-Bittern which often perches on the rail and sometimes tolerates a little petting. In the trees and flying all about are other beautiful birds—gorgeous rollers, motmots, Quetzal, barbets, touracos, and a brilliantly red Cock-of-the-Rock which often flies into the gallery. Several other birds do this, Giant Whydahs, Long-tailed Starlings, tanagers, Vermilion Cardinals, and some others, but all seem content to fly back and enjoy this brilliantly lighted bird paradise. The great skylight 30 feet above protects the birds from flying up against it by being covered with plastic waffle-like panels. There are four double 400 watt lamps in the wall above, not too noticeable, and several more lamps set below the floor under the railing beneath the floor. All of this light in the big cage makes the gallery comparatively dark, so that most of the birds are happy to stay in the open-front aviary. This improvement has worked wonders with the public, who are delighted and amazed when a brilliantly plumed Quetzal or touraco fans their heads as it swoops by. Seemingly the birds have never been more enjoyed.

Of course we had to consider the nature and habits of the birds that were to be at large, and they had to be compatible. We knew that the jays and other large omnivorous birds would not be desirable, nor would most of the seed-eating finches which would also nibble at the plant life ; so for these classes of birds there are other large community glass cages, to accommodate various jays, oropendolas, tree-pies, Australian butcher birds, and two smaller cages housing the larger orioles, tanagers, and grosbeaks. For humming birds, Sunbirds, and callistes we have twelve comparatively small cages, as most of these species do best kept separately. Our most interesting humming bird to date is the very tiny Vervain from Jamaica. Generally speaking, it is our opinion that sunbirds do better ; they are

equally beautiful though, of course, do not have the rapid wing-beat of the hummer.

Our Parrot House, while one of the Zoo's older buildings, still houses a good collection. One outstanding member is a beautiful Guilding's Amazon (from the Bronx Zoo), and in all we have forty-six species (240 individuals) in this building. We are fortunate in being able to keep all of these parrots outdoors from May to October, and have had good luck in breeding many of the larger Australian psittacines as well as others; outstanding being Grand Eclectus, Grays, and Roseate Cockatoos—unusual for this latitude.

Later on we hope to do an article on the varied species in the beautiful Aquatic House; we did do something on this years ago, but many rarer specimens have been added.

A list of the birds living in the "Freedom Room" at the Chicago Zoological Park, Brookfield, Ill. Apparently compatible. Regardless of scientific order.

Koel	<i>Eudynamis scolopacea</i>
Senegal Coucal	<i>Centropus senegalensis</i>
Bleeding-heart Pigeon	<i>Gallicolumba luzonica</i>
Mourning Dove	<i>Zenaidura macroura carolinensis</i>
Hartlaub's Touraco	<i>Tauraco hartlaubi</i>
Purple-crested Touraco	<i>Gallirex porphyriocephalus</i>
Lilac-breasted Roller	<i>Coracias caudatus</i>
Indian Roller	<i>Coracias benghalensis</i>
Blue-cheeked Barbet	<i>Megalaima asiatica</i>
Toucan-Barbet	<i>Semnornis ramphastinus</i>
Turquoise-browed Motmot	<i>Eumomota superciliosa</i>
Great Rufous Motmot	<i>Baryphengus martii</i>
Blue-crowned Motmot	<i>Momotus caeruleiceps</i>
Satin Bower Bird	<i>Ptilonorhynchus violaceus</i>
Regent Bird	<i>Sericulus chrysocephalus</i>
Gold-fronted Green Bulbul	<i>Chloropsis aurifrons</i>
White-eared Bulbul	<i>Molpastes leucotis</i>
Red-vented Bulbul	<i>Molpastes pygæus</i>
Fairy Bluebird	<i>Irena puella</i>
Quetzal	<i>Pharomachrus costaricensis</i>
Troupial	<i>Icterus icterus</i>
Moriche Oriole	<i>Icterus chrysocephalus</i>
Madagascar Wagtail	<i>Motacilla maderaspatensis</i>
Tri-colored Starling	<i>Spreo superbus</i>
Long-tailed Starling	<i>Lamprotornis caudatus</i>
Yellow-tufted Honey-eater	<i>Meliphaga melanops</i>
Vermilion Cardinal	<i>Richmondia phoenicea</i>
Rufous-backed Robin	<i>Turdus rufu-palliatus</i>
Pekin Nightingale	<i>Leiothrix lutea</i>



Silver-eared Mesia	<i>Mesia argenteauris</i>
Brazilian Scarlet Tanager	<i>Ramphocelus bresileus</i>
Orange-rumped Tanager	<i>Ramphocelus flammigerus</i>
Giant Whydah	<i>Diatropura progne</i>
Golden-backed Woodpecker	<i>Brachypternus benghalensis</i>
Yellow-backed Cacique	<i>Cacicus cela</i>
Red-legged Rail (Black Rail)	<i>Limnocorax flavirostra</i>
Crocodile Bird	<i>Pluvianus aegyptius</i>
American Jacana	<i>Jacana spinosa</i>
North American Stilt	<i>Himantopus himantopus mexicanus</i>
South American Stilt	<i>Himantopus himantopus melanurus</i>
Golden Plover	<i>Pluvialis apricaria</i>
Scarlet Ibis	<i>Guara rubra</i>
Mandarin Duck	<i>Aix galericulata</i>
Formosan Teal	<i>Anas formosa</i>
Red Cock of the Rock	<i>Rupicola sanguinolenta</i>

There are from one to five of each of the above birds in this "Freedom Room". We did try a magnificent Racket-tailed Drongo, but the first thing he did was to snap up two tiny Painted Quail, and he was removed pronto. We would like to mention here what I think is the longevity record of a Spiny-cheeked Honey-eater which lived from May, 1934, until December, 1956. With such a record, I would not trust his safety with other birds, nor would I do so with a Hardwicke's Green Bulbul received in October, 1936, and still in perfect plumage as was the Honey-eater.

\* \* \*

## NOTES FROM THE WILDFOWL TRUST

By S. T. JOHNSTONE (Slimbridge, Glos., England)

In the ten years that we have had a collection at Slimbridge, 107 forms of wildfowl have nested, and of these 100 kinds have been reared. Whilst a number of species have been reared for the first time in Europe, perhaps our greatest contribution to aviculture has been the re-establishment of the Hawaiian Goose (*Branta sandvicensis*) from the three birds presented to us by Mr. Shipman in 1949. Fifty-five birds have been reared, representing an estimated third of the world's population. Twelve have been reared by Mr. Terry Jones at Leckford, in whose care we placed a pair of birds some three years ago. Bearing in mind the possible loss of the Slimbridge flock from epidemic causes we have established pairs at our Peakirk branch, at Clères, and with Mr. Schuyt at Rotterdam; a pair has been returned to America under the care of Dr. Dillon Ripley. The Hawaiian Goose is probably the world's second rarest bird, and consequently the Trust is very proud of its effort in the attempt to save this beautiful goose from extinction.

1957 has been far and away our most successful breeding season. No doubt the improved breeding results were aided by the glorious weather of May, June, and early July, so that by the time the bad weather of August arrived the majority of the young birds were fully feathered and past danger.

But we must record a new method of feeding the young birds. All were reared entirely on dry Turkey Starter crumbs, and certainly it would seem that this had a very beneficial effect, not only on the numbers reared, but also on the rate of growth. Over 750 birds have been reared, representing 75 per cent of those hatched. The figures are as follows :—

<i>Kinds breeding.</i>	<i>Kinds reared.</i>	<i>Cygnets and Goslings reared.</i>	<i>Ducklings reared.</i>
91	72	195	583

Failure was recorded with the Bewick's Swan (*Cygnus columbianus bewickii*), the first clutch of five eggs being spoilt when the sitting pen was disturbed by the many visitors who came to the New Grounds this summer. The second clutch of eggs were unfortunately infertile.

A further disappointment was the loss of nine of the fourteen Ne-ne that hatched, owing to a heavy burden of tapeworm. On the other hand, the Magpie Geese (*Anseranas semipalmata*) have been extremely successful : six birds have been reared by foster mothers and a further five by the parent birds.

The Australian Grey Teal (*Anas gibberifrons mathewsi*) has been reared for the first time, and two drakes and a duck have been added to the collection. The Ringed Teal (*Anas leucophrys*) did very well, and we have added thirty birds to the original stock.

From our own point of view the most interesting species that we were successful with was the Smew (*Mergus albellus*). We have had a wild-caught female and three males at Slimbridge for the past six years, and although in recent years the female showed signs of getting "heavy" it was not until 1957 that she nested. In a small barrel some 2 feet from the ground the first egg was found on 12th June, closely resembling that of Carolina (*Aix sponsa*) in size, colour, and texture. Altogether five eggs were laid. A large amount of down was pulled after the third egg. The parent bird was allowed to sit on the eggs for the first ten days, and they were then removed and incubated under a bantam in the normal way. The incubation period lasted twenty-six days, and all five eggs hatched, the ducklings being extremely like young Golden-eye (*Bucephala clangula clangula*), the downy pattern being identical. Two ducklings soon fell behind and died, but the remaining birds thrived. Their early diet was fresh-water shrimp with trout fry, the fry being increased in size as the birds grew. Turkey Starter crumbs were also given, and when the

birds were feathered the trout were replaced by sections of live eel—the diet that is given to the rest of the Sawbills in the collection. All three birds are now well established.

At Peakirk, some nine miles north of Peterborough, we have laid out eleven acres of Waterfowl Gardens, and established a collection of seventy-five species of swans, ducks, and geese. Here a promising start has been made with breeding waterfowl, and 146 birds of fifteen species have been reared.

\* \* \*

## 1957 BREEDING RESULTS IN THE HALLSTROM COLLECTION

By Sir EDWARD HALLSTROM (Sydney, N.S.W., Australia)

Perhaps the most interesting experience I have had this year has been with the Golden-shouldered Parrakeet. The cross between the Golden-shouldered and the Hooded has proved to be fertile, and some youngsters from this cross are now fully matured. I have tried to cross the Golden-shouldered and the Many-coloured Parrakeet; I found that the older Golden-shouldered male would have nothing to do with the Many-coloured females. It then became necessary for me to rear youngsters of both birds together and now, after several years of waiting, I have three pairs that I feel quite sure will take up housekeeping in a very short time, as the males are already driving the females. My stock of Golden-shouldered Parrakeets has increased to fifteen pairs plus a few extra, odd males. Young Golden-shouldered barely a year old have gone to nest, and have reared youngsters. The cross between the Hooded and the Many-coloureds apparently are infertile. I have had at least a dozen pairs go to nest, without producing a single chick.

Some of the interesting birds I bred last year were some Red and Blue Macaws, Red and Yellow Macaws, Blue and Yellow Macaws, and more Glossy Black Cockatoos. One Banksian Cockatoo was completely reared by hand from the day it was hatched. Its mother took no interest in the baby; we undertook the job for her.

There were four Red-bellied Conures, four Cactus Conure crosses, as before, a great many African Lovebirds—Fischer's, Peach-faced, Masked, and Nyasa. Five African Grey Parrots, with three more babies in the nest at the moment, and three baby Cloncurry Parrots. For years I have wanted to breed the Cloncurry, but never seemed to be able to get a female. At last I have three females, and to-day one pair are sitting, a pair only a year old have gone to nest, and another nice pair have mated and are very interested in the nest-box.

Several years ago I sent out a very carefully planned expedition and procured some Blue-cheeked Rosellas ; two pairs, one of which are only twelve months old, are now sitting on eggs. I had never seen Blue-cheeked Rosellas before. They are not even mentioned in Cayley's book, *What Bird is That ?*, but they were recorded by Gould. I hope that within a week or two I will have established the first breeding record.

A few days ago, on making a check through my nest-boxes, I found many young Eclectus Parrots, a number of eggs, and a great many of the commoner Australian parrots. I have also two pairs of Yellow-winged Conures. There are at the moment five pairs of Macaws sitting on eggs.

I have another interesting youngster in the nest, about twelve days old at the moment—a Ribbon-tailed Bird of Paradise (*Taenia paradisea mayeri*). This, of course, is the first to be bred in captivity, and I am glad that the credit goes to me. They are in an aviary with quite heavy undergrowth. The female chose a very thick privet bush in which to build. She was supplied with ample nesting material, and built a nest quite 9 inches across, cup-shaped, the middle of the nest is no more than 2 inches deeper than the rim.

It took quite a long time to understand the mating habits of these birds by actual observation. Mating usually takes place after an attractive display by the male, and in the case of my birds, of which there are two more pairs sitting at the moment, was finally completed on the ground whilst the birds were locked together by the feet in such a manner that caused me to misunderstand the mating for fighting, which perhaps delayed my success with this particular species.

After mating, the male takes no further interest in the female, the nest or the youngster. Special food, a mixture of fruit and yolk of egg, was supplied, with a small handful of mealworms. The male apparently has respected this food and left it entirely alone, eating only the standard Bird of Paradise food that is provided in the ordinary way.

The aviary is about 30 feet long, 9 feet wide, and 7 feet high. The whole of the floor is concreted ; along either side of the aviary is planted privet, and other shrubby plants, in beds 12 feet long. These were built up from the concrete some 18 inches, leaving plenty of soil for the privet. The rest of the aviary was covered with leaf which soon became mould ; the mould is allowed to build up to between 2 and 3 inches ; this becomes a wormery, as literally thousands of earthworms breed in this litter. It is necessary, of course, to keep it moist every day, for the worms to thrive. The female turns the leaf over, and she is to be seen quite regularly pulling worms out of the leaf mould which she completely swallows and later regurgitates as food for the baby. Around the roots of the privet I throw large

numbers of termites daily, and also supply large white grubs, giving the parent a wide range of food from which to choose.

The youngster when hatched was a shiny black, quite ugly. It is now twelve days old, and pin-feathers are beginning to become apparent. When I found that this creature had been hatched, I got in touch with the Australian Museum, and in a few days, when it is safe to do so, Dr. Keast is being sent out to observe the baby, so that the record of this breeding can be verified.

The position in which the bird has the nest, in dense foliage, precludes photographs from being taken for the time being. I would hate to disturb or frighten the mother and perhaps prevent the very nice extra feather in my avicultural cap.

\*            \*            \*

## BREEDING OF TIMNEH × AFRICAN GREY PARROTS

By K. W. DALTON (Hallow, Worcs, England)

An African Grey Parrot hen and a Timneh cock which I purchased in the spring of 1956 laid four eggs on the floor of the shelter. They sat for about four weeks, but the eggs were not fertile.

This year I stood a hollow log on the floor of the shelter and they soon went to nest, four eggs were laid and both birds stayed in the nest all the time except for feeding. About the 27th June young were first heard, three of the eggs hatched and for the first two weeks, due to the very hot weather, neither of the parents brooded in the day time, but both did at night. Two of the young had black beaks the other a white one. The next three weeks were very wet and both birds brooded night and day, the cock Timneh coming off now and again to get food which consisted of apple, hemp, and monkey nuts, and though sunflower seed was offered little was taken, but very large quantities of water were drunk. During the sixth week the young one with the white beak died. The following week the parents only brooded at night and the young started to get feathers on head and wings. Three weeks later, when the young were half-grown, another one died and I can only put this down to suffocation at night as both parents brooded at night. Food taken was as before but now more sunflower seed was eaten, the parents were still brooding at night and this continued until the surviving young one left the nest-box when 13 weeks old. It has a reddish brown tail like the Timneh cock.

## BREEDING OF THE QUEEN OF BAVARIA'S CONURE

(*Aratinga guarouba*)

By DAVID M. WEST (Montebello, California, U.S.A.)

This year I have had young Bourke's, Elegants, Turquoisines, Barraband's, Pileated, Red-rumped, Crimson-wings, blue Ring-necks, Stanley, Rosellas, hybrid Brown's  $\times$  Yellow Rosella, and Queen of Bavaria's Conure. Princess, lutino Ring-necks, yellow Red-rumps did not breed.

The nesting of the Bavarias is the most amazing result for the pair are not perfect specimens. The male is a pinioned bird, and the female has a flight impediment, and though she flies it is with some difficulty. Accordingly it is all the more surprising that on 1st July I found the female on three eggs. As the pair go in and out of their nest and use it for a play-pen most of the time, I had not realized that they were nesting. She had not been noticed spending any special amount of time in the nest. It was my impression, on 1st July, that the three eggs were fresh. On 4th July it was 104 degrees in the garden, despite large, shady trees. Noting the female was off, and had been off almost continually during the day, I took a quick look-see. The initial impression was dismay, for broken egg-shells were in evidence. Then, as my eyes grew accustomed to the darkness in the interior of the box, two small bits of fluff and one egg could be seen. It had been my original impression that the broken egg-shells had indicated that they had used the eggs as toys, but what elation to find they had actually done the right thing and incubated them!

Despite an almost 100 per cent conviction on my part that the parents would refuse to feed, or murder the chicks, or the box would fall to the ground, or the weather would cook the chicks, the birds have continued to thrive. Since then the third egg has hatched, and the chick has grown apace, so that there is very little difference between the three in size.

The weather has been the greatest worry. The summer has been the hottest in several summers, and since 1st July there has not been a day with a temperature of less than 80 degrees, and several days with the temperature over the century mark. Still, the parents and chicks are doing well, so one should not worry, especially since it must be very warm in their native habitat.

Both parents apparently feed the young and have from the first. The male spends the night in the nest, which is about 18 inches by 18 inches by 3 feet high. The box is hung under a shelter. The young are quite noisy and, while the parents are feeding, their calls can quite easily be heard at a distance of 50 feet.

The female is the more aggressive bird, but does not appear to be too upset when an inspection of the box is made. As the box is at eye level, I do not have to touch the nest, but can look directly in and see the young. Inspections have been made each week, and on very hot days when the temperature has been in the 90's or 100's, an inspection is made daily for fear that one of the young might have died and the smell would cause the parents to quit the nest.

Food : The parents are surprisingly unimaginative. They are very fond of fresh corn on the cob, and will eat at least three large ears of this a day. Formerly they were very fond of orange and apple, but at present they do not eat much of them. Grapes are flung to the ground in disgust, and ditto pine nuts. The only seed they eat in quantity is sunflower and a little oats. Canary and millet are almost totally ignored. Greens are not much appreciated. It is obvious that the most important article in their diet while rearing young is the fresh corn. It is surprising to me how often they go to the water bowl to drink. Apparently they are a species that requires an inordinate amount of water while rearing young.

At the age of some thirty-five days the young were just beginning to show pin-feathers in the wing and tail. Now, at the age of six weeks they are almost fully covered with feathers, and quite large in size. Still, it would be my guess that they will be at least another three weeks in the nest. While they were without feathers their body colour reminded one of the body colour of young lutino or albino parakeets—quite pinkish.

This is not a first breeding for the U.S., but must be the second recorded breeding. Previously in California the Sun Conure went under the name of "Golden" Conure, and for this reason several people have, erroneously, been given credit for breeding the Queen of Bavaria's Conure. Some gentleman in Louisiana has bred the Queen of Bavaria's Conure and has reared three, although I believe he helped the parents and hand-fed the youngsters from time to time, although this fact certainly should not detract from his accomplishment. It is my understanding that the adult pair and one of their youngsters have been purchased by Mr. Rudkin, Junr., and are in his collection at Fillmore.

I believe that the youngsters will emerge from the nest with their plumage streaked with green. Mr. H. Zelenko, of New York City, has told the writer that a Bavaria in his possession laid eggs while still in immature (streaked green) plumage. Does this indicate they mature early, for somewhere it seems to me I've read that mature plumage is assumed at the end of the first year? This has been the case with the young bird reared in Louisiana, for it was in full adult (clear yellow) plumage by the end of fifteen or sixteen months.

*Post-script :*

At the end of the tenth week the youngsters left the nest. The youngest of the three birds left the nest too early, and daily would end up on the ground. This necessitated my replacing him in the nest every evening, and the following day the process would be repeated. This discouraging situation finally resulted in the removal of this bird from the aviary, and hand-feeding "him". I believe this bird to be a male, as it is very brightly coloured.

The remaining two youngsters were replaced each night in the nest-box for the first week after they came out. After the first week, however, they have been able to find their way back to the nest each night by themselves, and at the present time the parents and the two youngsters all sleep in the box together and without any fighting.

The young began to eat by themselves about the third day after leaving the nest. The parents take very good care of them, and constantly hover about the youngsters, even at this late date. (23rd October, 1957.) The youngsters are quite reluctant fliers, and prefer to crawl about rather than fly, though when forced into it they fly very well.

The parents are now back again mating regularly, and appear somewhat interested in the nest-box. However, the colder weather is coming upon us, and I doubt that their present interest will be long-lived.

It should be added that the two youngsters living with their parents have the same terrible galaxy of cries and yells that their parents have. The four birds greet each new dawn with a full assortment of terrible shrieks and cries . . . about the only drawback to this wonderfully coloured bird.



## LONDON ZOO NOTES

By J. J. YEALLAND

The fourth of the B.B.C. Television Service's "Zoo Quest" expeditions set out in June, this time for the Central Highlands of New Guinea where David Attenborough and Charles Lagus stayed at Nondugl as guests of Sir Edward Hallstrom, filming the animal life of the Wahgi and Jimi Valleys and later visiting the Bismarck Mountains. Sir Edward's fauna station at Nondugl is, as members know, in the care of Mr. F. Shaw Mayer, who, it will be remembered, brought a number of rare and beautiful Papuan birds to London before the war. The collection brought to the Zoo by David Attenborough in October called to mind those far-off days, for it contained thirteen Birds of Paradise, the largest number to be exhibited here since about 1940. These came from the large aviaries at Nondugl as a present from Sir Edward, the complete list (those new to the Collection marked with an asterisk) of his gift being : —

\*<sub>1</sub> Sickie-billed Bird of Paradise (*Epimachus meyeri bloodi*) ; \*<sub>2</sub> Princess Stephanie's (*Astrapia stephaniae ducalis*) ; \*<sub>1</sub> Salvadori's (*Paradisaea apoda salvadorii*) ; \*<sub>1</sub> Finsch's (*P. minor finschi*) ; \*<sub>2</sub> Blue or Prince Rudolph's (*P. rudolphi margaritae*) ; \*<sub>1</sub> King (*Cicinnurus regius similis*) ; \*<sub>2</sub> Golden-winged Magnificent (*Diphyllodes magnificus chrysopterus*) ; \*<sub>1</sub> Hallstrom's (*Pteridophora alberti hallstromi*) ; \*<sub>1</sub> Black and Gold (*Cnemophilus macgregori sanguineus*) ; <sub>1</sub> Lesser Superb (*Lophorhina superba minor*) ; \*<sub>1</sub> Stone's Cat-Bird (*Ailuroedus buccoides stonii*) ; \*<sub>2</sub> Yellow-breasted Bower-Birds (*Chlamydera lauterbachii*) ; \*<sub>4</sub> Blue-faced Lorikeets (*Trichoglossus haematod intermedius*) ; <sub>1</sub> Red-sided Eclectus Parrot (*Lorius roratus pectoralis*).

Those collected by Attenborough and Lagus, and presented by the B.B.C. Television Service :—

\*<sub>2</sub> Fig Parrots (*Opopsitta diophthalma coccineifrons*) ; \*<sub>1</sub> Plicated Hornbill (*Rhyticeros plicatus jungei*).

It will be noticed that the common names used for some of these birds are adaptations of the specific or sub-specific name, as the case may be. The reason for this is that these particular races appear to have no separate common name.

Some of the Birds of Paradise are still in the immature plumage. The Superb is the one described by Iredale as *L. superba addenda* ; I am not sure if this is an accepted name, but if so, the sub-specific name *minor* given above can be corrected later.

A great deal should be written about this magnificent collection, and it is hoped, if all goes well, to publish more detailed notes with photographs, though, as we all know, only coloured plates can do justice to Birds of Paradise.

Since the birds were not permitted to enter Australia, David

Attenborough had to take the collection (which, of course, also included some mammals and reptiles) to Rabaul, by sea to Hong Kong where he stayed with Dr. Searle, and thence by air to London. On the same plane came a pair of Chinese Starlings presented by Dr. Searle and a Javan Brahminy Kite and a Siberian Ground Thrush given by Mr. G. H. Newmark.

A Tengmalm's Owl that flew on board one of the ships taking part in the N.A.T.O. exercises off the Lofoten Islands has been presented ; also a Duck Hawk or North American Peregrine (*Falco peregrinus anatum*) which flew on to a grain ship off Baffin Island. The Duck Hawk is the first to be received here. A Red-fronted Woodpecker was sent as a present from Mrs. D. Seggar, who has previously given various birds collected in British Guiana, and a Bronzy Sunbird has been received in exchange.

Cormorants that nested on the imitation cliff in the Southern Aviary and reared two young earlier in the year have now re-made their nests in the trees, using the old materials.

*Editor's Note.*—With regard to the “common names” given to the Birds of Paradise in the above Notes, it is difficult to understand why it is considered necessary to do this. It should be emphasized that these so-called “common names” applied to rare exotic species, which are most unlikely ever to become *common* birds, have no real significance. For many years the Zoological Society of London, as in the present instance, seems to have invented “common names” by translating the specific or sub-specific name into the nearest English equivalent. This practice has never been followed in horticulture where the internationally accepted Latin name is retained for all rare species, and there would seem to be no real reason for departing from this generally accepted procedure. In addition the translation of such “common names” into other languages is liable to lead to confusion which could never arise if the correct nomenclature had been maintained.

## COUNCIL MEETING

A Council Meeting was held on 11th November, 1957, in the Council Room, Zoological Society of London.

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## OFFICERS FOR 1958

There were the following retirements and appointments :—

Council : Mr. Gerald Iles resigned on taking up residence in Canada, and Mr. Sydney Porter and Mr. R. C. J. Sawyer retired by rotation.

Dr. E. Hindle, Dr. F. B. Lake, and Mr. K. A. Norris were elected to fill the vacancies.

\*            \*            \*

Mr. Allen Silver was elected a Vice-President of the Society.

Mr. W. J. C. Frost was elected an Hon. Life Member.

\*            \*            \*

## SOCIETY'S MEDAL

The Society's Medal was awarded to :—

Mr. E. J. Boosey, for breeding the Senegal Parrot (*Poicephalus senegalus*).

Mr. E. J. Boosey, for breeding the Greater Hill Mynah (*Eulabes religiosa*).

Mr. A. A. Prestwich, for breeding the Green Imperial Fruit Pigeon (*Ducula aenea*).

ARTHUR A. PRESTWICH,

*Hon. Secretary.*

## EXCHANGE AND MART SCHEME

Members often have odd birds for which they are unable to obtain a mate. In order to facilitate the exchange of such birds the Council have decided to inaugurate this scheme.

Any member who wishes to take advantage of the scheme should send to Mr. C. M. Payne a postal order for 5s., and particulars of the bird required or for disposal. If Mr. Payne has a record of such a bird from another member he will advise both members, who will then be in a position to communicate with each other. It is not the intention that the Society should take any part in the negotiations.

The payment of 5s. will entitle the member to the benefits of the scheme until the 31st December, 1958.

Mr. Payne's address is : The Malt House, Barford, Warwickshire.

## BRITISH AVICULTURISTS' CLUB

The fifty-ninth meeting of the Club was held at the Rembrandt Hotel, Thurloe Place, South Kensington, S.W. 7, on Monday, 11th November, 1957, following a dinner at 7 p.m.

Chairman : Dr. E. Hindle.

Members of the Club : Miss P. Barclay-Smith, Miss J. Barnes, P. C. Bath, Hylton Blythe, A. W. Bolton, Miss K. Bonner, K. F. Clarke, Major C. N. Clayden, W. D. Cummings, Mrs. R. E. Darnton, Sir Godfrey Davis, M. F. Draper, B. H. Dulanty, Sqd.-Ldr. C. Everitt, Mrs. C. Everitt, Miss R. M. Ezra, Miss E. G. Ganner, J. C. Garratt, Dr. E. F. Gleadow, F. Grant, Miss M. Hagan, H. J. Harman, R. E. Heath, L. W. Hill, Miss S. I. Hobday, F. E. B. Johnson, Miss S. R. Joseph, Miss E. M. Knobel, Miss M. H. Knobel-Harman, Dr. F. B. Lake, A. J. Lambert, A. L. Leighton, P. H. Maxwell, F. Mosford, G. S. Mottershead, S. Murray, Sir Crawford McCullagh, Bart., K. A. Norris, W. R. Partridge, C. M. Payne, A. A. Prestwich, J. H. Reay, D. M. Reid-Henry, S. Sanderson, R. C. J. Sawyer, J. L. Sears, D. Seth-Smith, A. C. Soanes, T. Spence, E. O. Squire, N. R. Steel, P. Sutton, J. A. Swan, Mrs. J. A. Swan, J. Thorpe, E. N. T. Vane, Mrs. G. Wheatley, H. Wilmot, W. A. Wingate, J. J. Yealland, D. Young.

Members of the Club, 62 ; guests, 54 ; total, 116.

Mr. and Mrs. R. E. Darnton were unable to show " Birds, Beasts, and Butterflies of Equatorial Africa " as notified to members, because this film has not yet been completed. Instead, they showed " Tobago and nesting Flamingos in the Caribbean ".

Mrs. Darnton has provided the following summary :—

" We spent last winter in Trinidad, Tobago, and Bonaire, and our film opens with various scenes taken round the lovely coast of Tobago and of the even more lovely hills and valleys of the island itself. When we were there, these valleys and hillsides were aflame with the spectacular flowers of the *Erythrinas* grown for shading the cocoa, and from many of these trees hung the long, pendulous nests of the Crested Hang-nest (*Ostinops decumanus*) whose activities we filmed.

" We also found a Hairy Hermit Humming Bird (*Glaucis hirsuta insularum*) attaching her nest with cobwebs to the tip of a hanging palm frond—a difficult subject for the camera, as the nest was only lit for ten minutes or so in the early morning. Unfortunately this lack of good lighting formed a problem throughout Trinidad and Tobago, as many of the most beautiful birds of these islands, such as the Red-capped Manakins, the Mot-mots, the Jacamars, and the Trogans, are birds of the shadows, and so are impossible to photograph satisfactorily.

" However, when we went to Bonaire this problem did not arise,

for instead of dense, tropical vegetation and tall forests, we found comparatively desert-like conditions—only trees and plants resistant to a very low rainfall being able to survive. Here in this tiny island we were fortunate in finding a colony of the Rosy Flamingo (*Phoenicopterus ruber*) actually nesting. This was extremely lucky for normally they do not nest until May, and we were there in early March. In fact we found several thousands of young birds of various ages already running about in great, grey flocks, while some of the adults were still sitting on eggs. This species of flamingo is undoubtedly the most beautiful, and is said to be also the rarest. We were so entranced by their beauty that we used to get up at 5 a.m. every morning so as to be at their feeding grounds just after dawn. To live almost among these lovely birds as we did for a fortnight, we felt was indeed a privilege we shall never forget."

The Chairman said he had seen numerous films of flamingos, but never one to equal the present. Judging by the applause, this opinion was obviously shared by the large audience. These are really worthwhile films, and Mr. and Mrs. Darnton are to be heartily congratulated on the results of their recent visit to the West Indies.

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The annual subscription (5s.) will be due very shortly. Will members please note that, with a view to saving the unnecessary expense of postages, receipts will not be sent unless specially requested.

The next meeting of the Club is on Monday, **13th January, 1958.**

ARTHUR A. PRESTWICH,  
*Hon. Secretary.*

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## NEWS AND VIEWS

Colonel H. B. Finch has bred a hybrid of hitherto unrecorded parentage, Nutmeg or Spice Finch  $\times$  Magpie Mannikin.

\* \* \*

The Whooping Crane is very close to extinction: only twenty-three are known to remain in the wild, with three in captivity. Both in 1955 and 1956 the pair in the Audubon Park Zoo, New Orleans, laid eggs and hatched young, but they soon died. This year the pair has again hatched young—this time it is to be hoped with better success.

\* \* \*

S. A. Croucher, Head Keeper, Parrot House, Zoological Gardens, Regent's Park, retired on 15th October, after forty years in the service of the Zoological Society of London. Many members are greatly

indebted to "Sid", as he is familiarly known, for help and advice during many years, and all will wish him well in his retirement. Croucher has been succeeded by Fred Shambrook.

\* \* \*

Comte Léon Lippens reports a hitherto unrecorded cross, Ring Ouzel (*Turdus torquatus*) × Mistle Thrush (*T. viscivorus*). In an aviary at the bird reserve "Le Zwin", at Knokke-Le Zoute, Belgium, a Ring Ouzel paired with a Mistle Thrush. They had four eggs : two young were hatched, one of which thrives and is now over three months' old. It is described as looking rather like a very dark Mistle Thrush.

\* \* \*

Dr. Sten Bergman writes from Sorong, Dutch New Guinea : "I have excavated earth mounds of the Megapodes, where they lay their eggs. I have succeeded in hatching two eggs in a cupboard, heated by a lamp burning day and night. I have thus had an opportunity of observing the very interesting and curious hatching. The chick kicks itself out of the egg and is able to fly as soon as it is dry. At present I have two chicks nearly two weeks old."

\* \* \*

A. Decoux, Aix-sur-Vienne, France, reports : "I think the present breeding season is the worst I ever saw. The young parrakeets and finches died in the nests in May. The weather was wet and cold : we had very severe frosts in April and May.

I have successfully bred the following doves and pigeons : Wonga Wonga, Common and Crested Bronze-winged, Peruvian, Talpacoti, Diamond, Peaceful, Senegal, Bleeding-heart, and several others ; Cuban Finches, Green Cardinals, Red-crested Finches, a few Australian Grassfinches ; many young died after leaving the nest on account of the cold and rainy summer."

\* \* \*

K. A. Norris sends further news of his birds : "The young Blue Robins are almost through their first moult. There are five splendid young cocks, bringing the stock of this species up to  $7\frac{1}{2}$  pairs ! The young Red-winged Blackbirds are also doing very well and one young cock is already learning to display its scarlet shoulder tufts.

Zosterops had a magnificent little nest, entirely of plant fibres, but, unfortunately, the two eggs appear to be infertile. The swarms of fruit and other flies which we "created" in anticipation of the arrival of young Zosterops have greatly delighted the Tree Frogs, and their response might lead one to think that I have the B.B.C. Male Voice Choir in the birdroom."

\* \* \*

On the last day of August, W. J. C. Frost arrived back in England by P. & O. cargo-liner *Shillong*—on the following, outward voyage, this ship sank after a collision in the Red Sea—with the results of his fifty-third collecting expedition.

Amongst the birds brought home were Greater and King Birds of Paradise ; Great Indian, Wreathed, Plicated, and Malayan Pied Hornbills ; White-fronted Bronze-winged, Nicobar, Partridge, and Bleeding-heart Pigeons ; Bronze-tailed Peacock and Bornean Crested Fireback Pheasants ; Blue-tailed and Blue-winged Pittas ; Fairy Bluebirds ; Rothschild's and Black-necked Grackles ; Fire-tufted Barbets ; Rose Finches ; Mitchell's Lorikeets, etc. Wilfred Frost, now aged 82, left in the middle of November on yet another expedition to Borneo.

\* \* \*

Breeding reports : Dr. S. B. Kendall, Citron-crested Cockatoos reared two exceedingly good young ; Greater Sulphur-crested incubated a single egg for about 28 days, after which it disappeared. Walther Langberg, Copenhagen, 2 Grey Parrots, 11 Splendids, and 3 lutino Nyasa Lovebirds. H. Murray, 2 Barraband's Parrakeets, male and female, bred from recently imported birds ; 19 Cockatiels, 5 Bourke's, 1 Guiana Parrotlet, 6 Green Cardinals, and a number of Nyasa Lovebirds. W. H. Rose, Blue-fronted Amazon, 1 young one just over three weeks old ; Yellow-backed Lories hatched 1 young one which lived about seven days ; they failed to hatch the single egg in their second nest. Dr. K. G. Rothwell, 4 Elegants, 7 Bourke's, 4 Golden-Mantled Rosellas, 4 Stanleys, Diamond Doves, and Chinese Painted Quail.

\* \* \*

Leo A. Ara, Calcutta, records the following breedings : " Indian Ring-necked Parrakeets, March, 1954, one ; April, 1957, one. From a second pair, the male being a yellowish bird (not a lutino) and the female normal, April, 1957, two—both green in colour. The yellowish male's colour does not remain constant as it has in turn been yellow, pale green, and yellow-green. Quaker Parrakeets, July, 1955, two ; October, 1955, one ; August, 1956, two ; January, 1957, one. I now have a dozen. Golden-headed Conures, November, 1956, three ; February, 1957, three. At present they have young in the nest. I do not know how many but I have seen a young one, not fully feathered, at the entrance to the nest. They are really lovely birds and all live together in the same aviary."

\* \* \*

C. af Enehjelm, Director, Helsingfors Zoo, writes : " I have not had a very successful breeding season, mainly due to a long absence. I have, however, bred 5 Three-coloured Parrot Finches, 20 Long-tailed Grassfinches, 7 Bicheno's Finches, and some others. I have bred

6 Green-rumped Parrotlets. These are the first for some time—I had so many I have not allowed them to breed for the past two or three years.

Last year's disappointment with the Red-headed Buntings (*E. icterica*) was repeated. Three young ones were hatched but they were fed for only a couple of days. The Indian Zosterops commenced incubating three eggs, but these disappeared. The same thing happened with four nests of Peters' Spotted Waxbills. Amongst my new arrivals are three pairs of Dufresne's Waxbills from Keston, also pairs of Melba and Crimson Finches. I now have two yellow and one "white" Masked Lovebirds—the last is very ugly."

\* \* \*

When the Society was founded in 1894 the annual subscription was fixed at 5s. Four years later, in 1898, it was raised to 7s. 6d., and in 1900 to 10s. And so it remained until 1918 when it was increased to £1. It has now stood at this figure for 40 years !

The Avicultural Society is the only society of similar standing that has not increased its subscription during the recent, semi-inflationary years. But if the very high standard of the Magazine is to be maintained without an increase in the annual subscription the Society's income must be increased. This may best be done by the members themselves. They must make every possible effort to propose new members. No amount of energy on the part of the Officers can make up for apathy in this respect. And please remember that donations to the Coloured Plate Fund are always very welcome !

A. A. P.

\* \* \*

## REVIEWS

ORNAMENTAL WATERFOWL. By Lieut.-Col. A. A. JOHNSON and W. H. PAYN. H. F. and G. Witherby, Ltd., London, 1957. Price 21s. net.

Though wildfowl are very popular and a large number of books have been published, especially in recent years, on this group of birds, there have been comparatively few on keeping them in captivity. Rose Hubbard was the first to produce such a book, entitled *Ornamental Waterfowl*, which was published in 1888, with a second edition in 1907. After an interval of a quarter of a century A. F. Moody's book on *Waterfowl and Game Birds in Captivity* appeared in 1932, and this was followed in 1933 by J. C. Laidley's comprehensive work on *The Care and Propagation of Ornamental Waterfowl*. Unfortunately all these books have been out of print for some time and are most difficult to obtain, so that those who wish to start a collection of waterfowl have been at a great disadvantage. The appearance of the book under review is therefore particularly welcome and the authors have dealt with their



subject in a straightforward and simple manner which will be of particular use to those wishing to make a beginning in this fascinating branch of aviculture. The first chapter is on starting a collection and contains a list of some of the more attractive and less expensive ducks which are particularly suitable for beginners. The second deals with fencing, planting, and pond construction, and the book continues with chapters on general management of the collection, nests and eggs, hatching and rearing, plumage and moults, and ailments and diseases. Then follow descriptions of some native and exotic ducks and the geese and swans.

The necessity of making sure, by actual observation, that the ducklings are eating is pointed out, but the authors do not give information, as does Mr. Laidley, on methods of ensuring that the young birds do take food.

Emphasis is laid on the importance of winning the complete confidence of ducks and geese from the start and the great value of always talking to the birds when feeding or walking among them. That the authors carry out what they preach is shown by the instance quoted of a wild White-fronted Goose belonging to one of them which ate bread from the hand within six weeks of being captured, and which now likes to travel about sitting in the front seat of a motor-car.

The fact that each time there has been a special Waterfowl number of the Magazine the issue has sold out is evidence of the great interest there is in this group of birds and this latest book should therefore be in great demand. As the authors state : " There is, in fact, no reason at all that anyone who is interested in waterfowl should not keep at least a pair or two even if they have only the smallest of gardens or nothing more than a backyard."

P. B-S.

\* \* \*

**ARCTIC BIRDS OF CANADA.** By L. L. SNYDER. University Press, Toronto ; Oxford University Press, London, 1957. Price 38s. net.

Though as the author, who is Curator of the Department of Ornithology in the Royal Ontario Museum, Toronto, states in the introduction, the scope of this book is approximately indicated by its title, it has been necessary to establish a rather precise boundary along the southern perimeter to serve as a threshold in determining what forms to include or exclude. Accordingly the boundary has been established as a line running along the treeless coasts of Yukon territory and Mackenzie District east to Bathurst inlet and thence south-eastward to Eskimo Point on Hudson Bay, across that Bay to Portland Promontory on the east coast ; thence eastward to Ungava Bay and along its treeless coast to Cape Chidley. All species known to occur, or which have occurred north of this line are included.

In describing the nature of Arctic birds the author points out that it is not correct to assume that they are exceptionally hardy. He states that among the more relentless factors enforcing adjustment among Arctic birds is time, especially for migrants, and there is an urgency in courtship, laying, incubation, and growth of young. He also points out that the Arctic is stern and insistent, discouraging the development of frills and non-essentials such as crests, wattles, spangles, and complicated rituals, and Arctic birds are plain and unembellished.

In describing the nature of Arctic bird populations he states that the best established generality is that they are notoriously unstable as to numbers and much of the instability is attributable to weather. The Arctic has been virtually unavailable to birds of arboreal habit and nearly half belong to one Order the Charadriiformes.

Attention is drawn to the fact that the knowledge of Arctic birds is very meagre and a number of points requiring detailed study are outlined. A key to the Orders of Canadian Arctic birds is given, followed by a section on habitat as an aid to identification. The main part of the book is devoted to accounts of seventy-two species of ten different Orders, which include status, habitat, and characteristics, with map. Additional names have been selected from the literature to include those which may be in use locally in the North, and Eskimo names for particular regions are given. In many cases there are excellent pen and ink drawings by T. M. Shortt.

P. B-S.

\* \* \*

BIRDS OF BRITAIN CALENDAR FOR 1958. Country Life, Ltd., London. Price 6s.

This calendar with a photograph of a different species for each month of the year by Eric Hosking is well up to the high standard of its predecessors. A short description of each bird is also given.

P. B-S.

\* \* \*

## NOTES

BREEDING AND REARING SUCCESSES AT BARFORD, WARWICKSHIRE, 1957.

The following birds have been bred this year: Derbyans, 3 youngsters fully reared; Princess of Wales, 4 youngsters fully reared; Barrabands, 3 youngsters fully reared; Cockatiels, 7 youngsters fully reared; Peach-faced Lovebirds, 7 youngsters fully reared; Elegant Parrakeets, 1 youngster fully reared. Fischer's Lovebirds, a quantity, not less than 25 fully reared; so-called yellow Masked Lovebirds, 2 youngsters fully reared; split-lutino Indian Ring-necked cock paired to a normal hen—had 2 youngsters, both green; Chinese Painted Quail, 2 youngsters fully reared.

In addition to these I have reared a number of Pheasants and Peafowl. Rock Peblers had 4 youngsters which were lost after they left the nest; Yellow-backed Lories, Many-coloured Parrakeets, Leadbeater's Cockatoos, Splendid Parrakeets, and Bourke's Parrakeets had eggs which proved infertile. Towhees, 3 youngsters, which they subsequently lost in the cold weather.

I think this may be the first time that yellow Masked Lovebirds have been bred in this country. There is perhaps some doubt as to whether they are in fact pure Masked Lovebirds. John Yealland, when he saw mine, expressed the view that they had Peach-faced Lovebird blood in them. However, contrary to the expressed opinions of more knowledgeable aviculturists, I still think that they are a delightful mutation, and I see no reason why in time by careful selection they should not be bred completely yellow with the very attractive bronze face. I have seen a considerable number of this mutation, and they vary in the intensity and clarity of the colour considerably. The pair which I have bred this year are very attractive.

A newly-imported pair of Turquoisines are at the moment sitting on five eggs.

C. M. PAYNE.

#### NESTING OF PILEATED JAYS

My pair of Pileated Jays fortunately went to nest in mid-July, 1956, in a small aviary 12 feet by 4 feet, the shelter being 4 feet by 4 feet.

As they seemed to be playing around with nesting material and stripping the various growing plants and creepers in their aviary, I put an old Magpie nest in the shelter, never thinking that they would breed, but with the object of giving the plants a chance by diverting their attention. Great was my surprise two days after placing the nest to find an egg, not unlike that of our Magpie, in it. Two more eggs followed in the course of the next four days. The hen seemed to do all the sitting. In fact I never saw her off the nest, and the cock fed her. On the sixteenth day one youngster was hatched. When I looked about four days later the three eggs had hatched. Both birds appear model parents, but the cock did all the feeding. On collecting mealworms or maggots he would first feed the hen. She would then raise herself and the cock would feed one of the youngsters; he would repeat this until all were fed. Incidentally, I was not standing in the aviary shelter while this was taking place; their aviary was one of a range, and I could observe this from a small passage dividing their shelter from the next.

As at this time we were very busy on the land, I had not the time to collect beetles, grasshoppers, etc., of which they are very fond, so they had to make do on soft food and fruit, with mealworms and maggots as the only live food. I think perhaps this is the cause of the failure to rear them. On the seventh day I found one of the babies tucked away in a bush in the flight. A couple of days later the second one was placed in the same spot. The last one was still alive and apparently lusty on the sixteenth day, but as I could hear no feeding noises on the eighteenth, I flushed the hen. This, the last hope, was dead, although there was food in its crop. Never having seen a young Jay before, I couldn't really say, but my impression was that it was on the skinny side. The pair are nesting again now, so perhaps they will have better luck this time. They certainly deserve it, as both proved such good parents. As I have said before, the only conclusion I can come to is that perhaps the cause of failure was something lacking in their diet. However, we will see what happens this time.

P. G. PARIS.

#### BREEDING RESULTS AT SAN MARINO, 1957

Members may be interested to hear how some of my birds did this year. This season, after an unsuccessful attempt last year, I was able to rear one Black-chinned Yuhina. Two young were hatched but one died. The survivor has been removed from the "glasshouse aviary" to avoid the possibility of its being killed by the parents. An interesting attempt was made by a Mountain Tanager male and a Red-eared Tanager female. They built a nest in a spruce tree but as far as I know no eggs were laid. As I am now out of the navy and will be back in Los Angeles next year I am planning to remove these two Tanagers and give them a planted aviary to themselves. A hybrid from them should be a truly magnificent bird. I also reared five young Grey-headed  $\times$  Brahminy Mynahs. I would like to state that the Grey-headed  $\times$  Pagoda Mynahs referred to in my article (page 47) were, in fact, the present cross. Brahminy Mynahs are often advertised as Pagoda Mynahs, hence the confusion, but they are not the same.

J. R. VAN OOSTEN.

## CORRESPONDENCE

THE DRINKING HABITS OF *DUCULA* SPECIES

I have seen the Green drink in the wild state, and had both Pied and Green drink in captivity.

I have not seen them drink whilst standing on the ground with open feet. Like all the fruit pigeons they do not care for walking. The ones I had in captivity drank off perches, the water being placed within reach. Birds in aviaries had overhanging branches. They sidled down the branch until they could reach the water.

The common Bengal Green I have seen settling in huge numbers on the lower branches of a peepul tree (*Ficus religiosa*) until the branch touched water. Other fruit pigeons more normally settle on dead branches sticking out of the water. The Green Imperial are, of course, tree-top dwellers and very rarely come down to the ground. I should think they would get plenty of water, high up, which had been caught in broken branches. If my memory does not fail me these pigeons drank at dawn and dusk. I succeeded in breeding the Green while in Calcutta.

Stuart Baker mentions that some natives believe the Green Pigeon only comes down to drink where no perches are available, if it has a branch clasped in its feet. I have been told this by villagers in Bengal.

HERBERT FOOKS.

GRIZEDALE LODGE,  
HAWKSHEAD, NR. AMBLESIDE,  
WESTMORLAND.

BREEDING OF CRIMSON FINCHES (*NEOCHMIA PHAËTON*)

This summer we were fortunate in breeding three young Crimson (Blood) Finches (*Neochmia phaëton*). The parents nested in a covered flight, producing five eggs, the first about the 19th July. The young were hatched on 5th August, and three left the nest on the 25th and 26th August. A fourth was found dead at a very early age, and one egg was broken. We separated the young from their parents on the 12th September, as the first egg of a second round was laid on that day, and the young were being prevented from returning to the nest, which was usual until then. The three young are very fit indeed at time of writing (25th September), are medium brown in colour, slight crimson diffusion over back and wings, crimson tail, underside brown, flight-feathers dark brown, belly and thighs light brown, beak black.

The birds were very insectivorous, being fed gentles, once or twice ant eggs, and some mealworms, with plenty of chickweed and home-made sponge cake. Ideal parents, with the cock doing most of the incubation and much of the feeding.

L. SCAMELL.

WOODBURY COTTAGE,  
BROAD LANE,  
NEWDIGATE, SURREY.

## A DIRECTORY OF BIRD RINGING

A world-wide directory of bird ringing is proposed to be published by *The Ring*, an international ornithological bulletin devoted entirely to bird ringing and bird migration studies. The avicultural rings will be included in this directory besides the rings of ornithological schemes, carrier pigeon associations, etc.

I should be most grateful if readers of the *AVICULTURAL MAGAZINE* could assist us by sending information and addresses—home and abroad—of all possible, even the smallest institutions, organizations, clubs, businesses, and individuals issuing their own rings for cage-birds. Samples of rings are essential, and would be greatly appreciated.

All communications and information should be sent to *The Ring*, 1 Altyre Road, Croydon, Surrey, England.

Dr. W. RYDZEWSKI, *Editor*.

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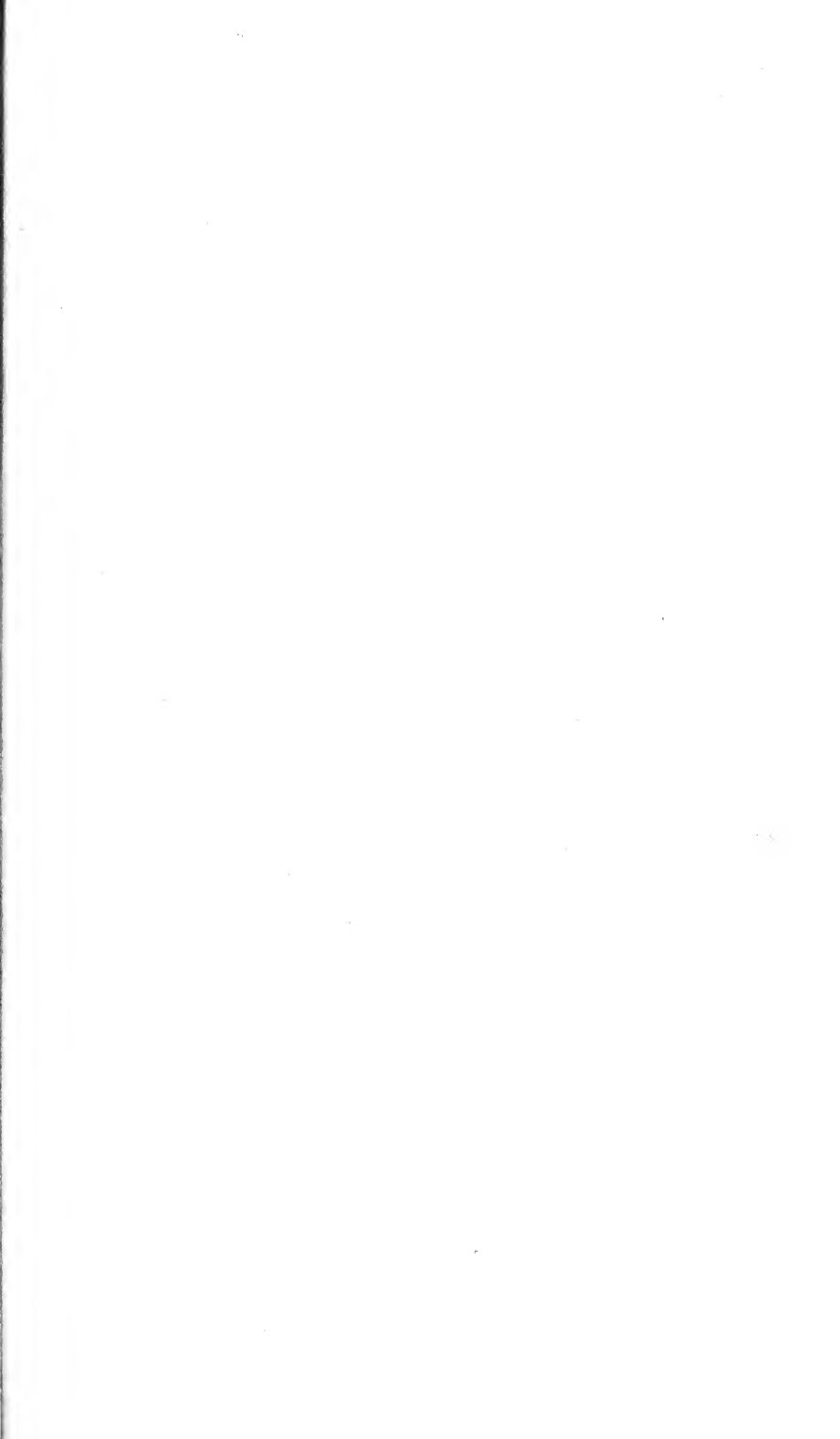


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India	. <i>The Indian Aviculturalist.</i>
Netherlands	. <i>Ardea, Onze Vogels.</i>
South Africa	. <i>The Bokmakierie, The Ostrich, S.A. Feathered World.</i>
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The thirty-one Candidates for Election in the September-October number of the  
AVICULTURAL MAGAZINE were duly elected members of the Society.

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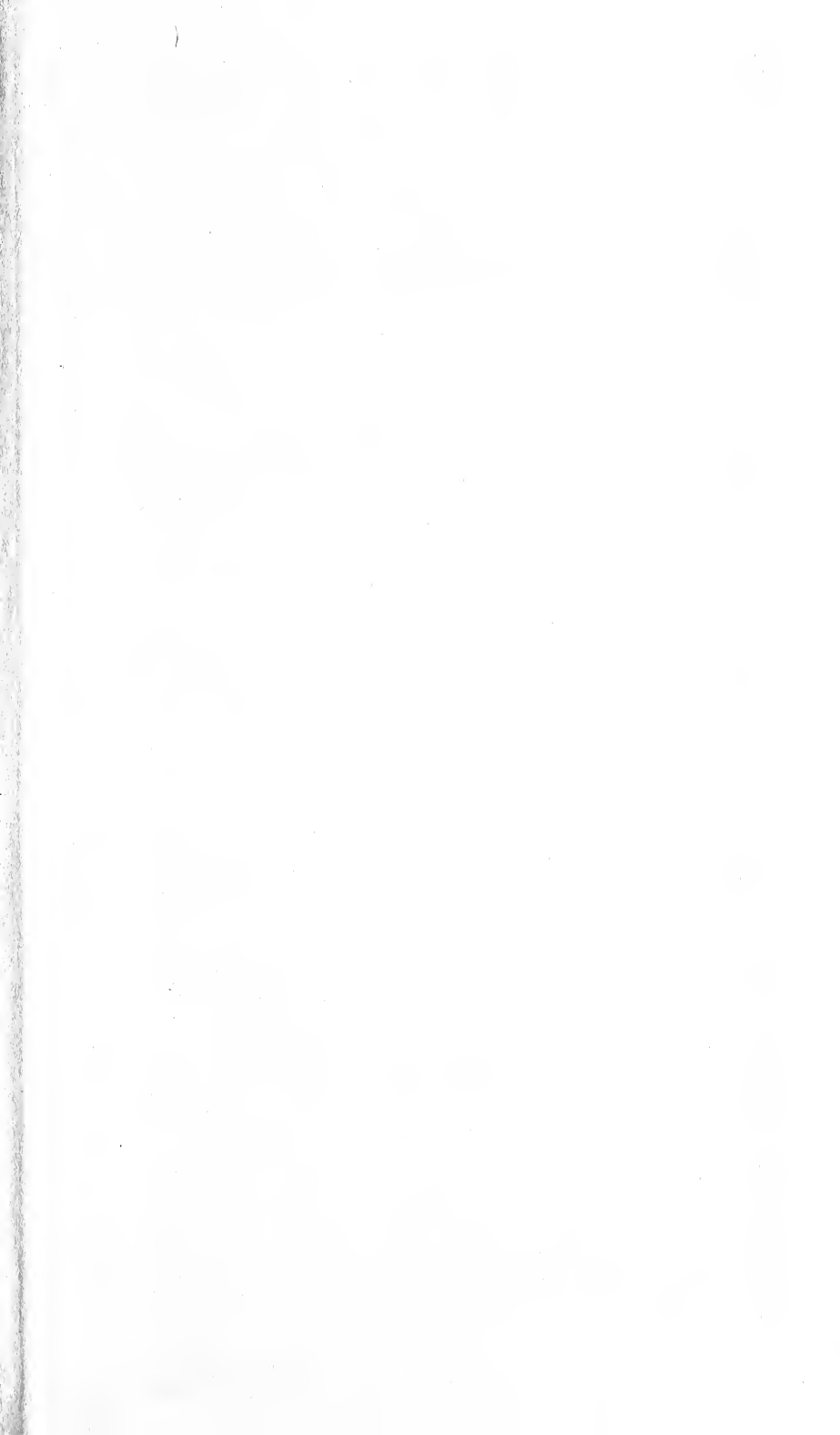












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